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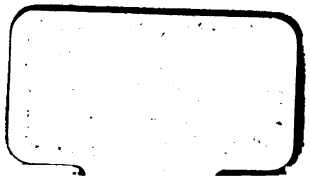
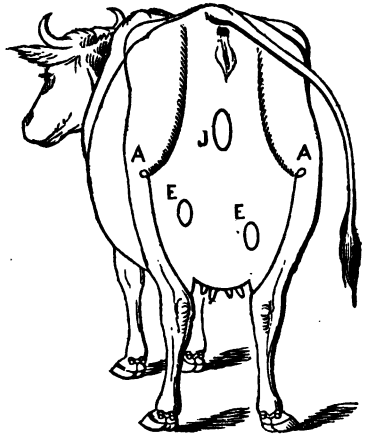
GUÉNON

ON

THE CHOICE OF MILCH COWS



NINTH CLASS—MONGREL COWS.



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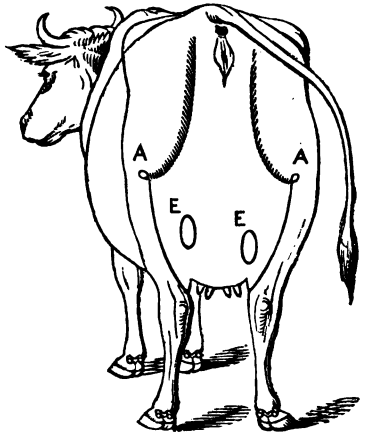

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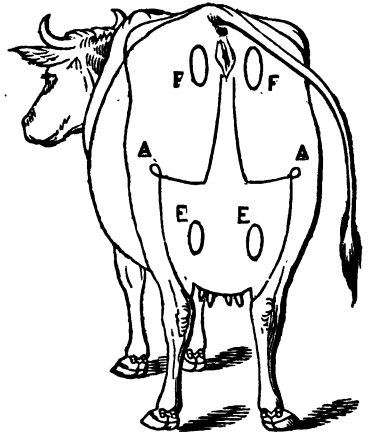

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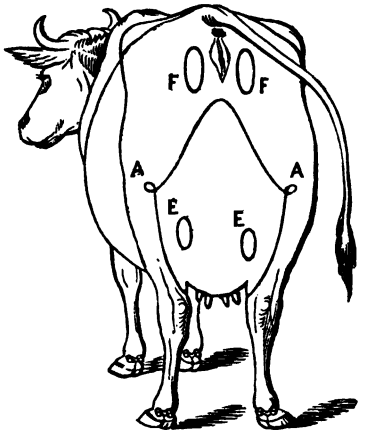

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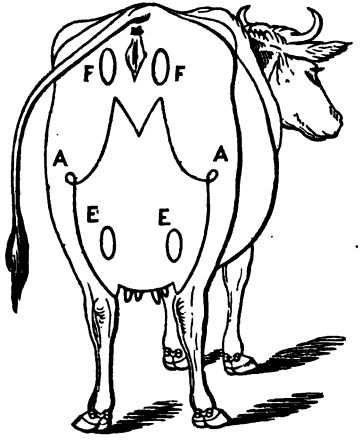

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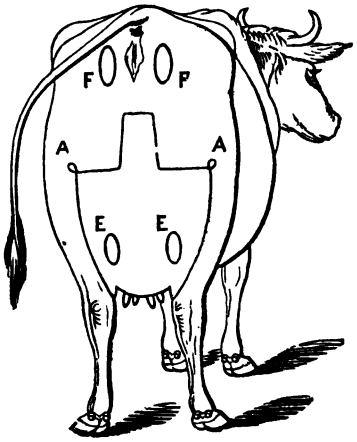

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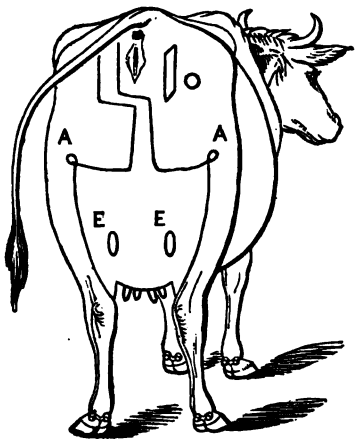

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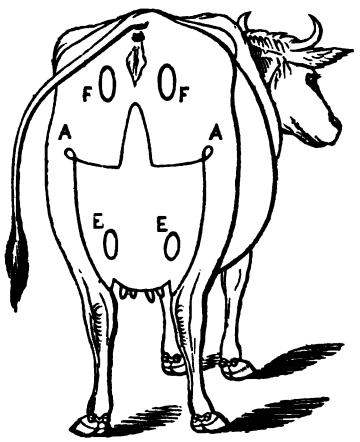


Seventh Class.

TREATISE UPON MILCH COWS.

ACCOUNT OF THE DISCOVERY.

In writing the history of my discovery, I must speak of myself. My recital shall be short and succinct, although my labours have been very tedious; but such is the case with almost all discoveries. One will meditate for a long time upon a point which one moment will make apparent.

I am the son of a gardener; for a long time I followed the same calling. I was a great observer of nature; I was always making comparisons, and drawing conclusions from them. For a length of time one idea occupied my mind; it was, that I believed I was destined to make some important discovery in the branch of industry which I pursued. Was this vanity? Whatever it may have been, it took deep root in my mind, and became a fixed idea. In endeavouring to arrive at this desired discovery, I studied the works of the most learned botanists and agriculturists. I learned geometry; also the art of design. I applied myself to all the separate branches of the vegetable kingdom, to know exactly the exterior signs by which to classify the plants and vegetables, and to estimate the value of their qualities and produce, even in their earliest growth. This was doing much, no doubt; but the idea which followed me throughout, would not allow me to stop here. I was like Ashaverus, under the hand of the angel; a voice within me was continually crying, "advance," and it obliged me to do so, and I caught a glimpse of the discovery towards which I was approaching. Chance discovered the famous purple of Tyre: chance offered to my eyes an observation which laid all the foundation of my method.

I was fourteen years of age, and I went, according to the custom

of my country, to graze the only cow belonging to the house. I loved her much, and knew her perfectly. One day, as I was amusing myself scratching the bunch which formed the hair, growing the wrong way, or against the grain, on the hinder part of my poor companion, I perceived that a quantity of a kind of bran, or powder, came off. This particularly attracted my attention. I recollected having heard one of my superiors say, that cows should have some exterior signs, by which one could know their qualities and their defects, as one can know vegetables by the lines of their skin. This reflection coincided exactly with mine. Reasoning by induction, I arrived at this conclusion, that if, in the vegetable kingdom, there exist some signs which positively indicate the good or bad qualities of plants, there ought also to exist in the animal kingdom some exterior analogous signs, by which one could know the qualities and defects of any animal; and I believed I had discovered one of these signs.

But some conclusions which I might draw from this might still be only a brilliant theory, which experience might contradict. It was, therefore, necessary to appeal to Nature herself. The cow which I had the charge of was good. I sought all around me, in the cows which were near at hand, and which were known to me, if I could find the same signs as in mine. I proceeded to scratch off the powder, which is like bran, the abundance or scarcity of which fixed my attention. I never failed to compare each new cow with mine own. I then decided upon the degree of equality, or superiority, or of inferiority. From that I never ceased to follow my observations. I spared no fatigue. Many times have I gone very many leagues to examine one cow. As I was quite satisfied, in my own mind, when having examined an individual cow, the answers to the questions, which I did not fear to heap upon the proprietor, confirmed my judgment. How often have they believed that I must have known previously the cow on which I was passing my judgment; they were quite astonished at the secret, which I took good care not to communicate.

In comparing thus cows with one another, I had occasion to remark that the gravure which produced the powder or kind of bran (which at first was my only guide), varied in their form. From thence new meditations, new reasonings. At length, in 1814, I was convinced that it was from these different signs that one could know the faults and qualities of each animal. From that time my discovery

was made, but it should be reduced to a system, particularly to support it by proofs, to pass my own convictions into the minds of others. It was here I had need of all my courage, and all my perseverance. It was not sufficient, indeed, to have discovered the characteristic signs; it was necessary to be assured that the same signs always indicate, in a sure and positive manner, the same faults and the same qualities. To arrive at this, I was obliged to study an immense number of individual animals, to compare them relatively, according to their country, their size, their production. This was not all; it was necessary to classify them. One may imagine what labour this study imposed upon me, a simple child of nature, who never had any idea of a like classification, but which I found myself obliged to establish. This inquiry completely absorbed me. I visited, at great expense, the markets, the fairs, the great cow-houses. I interrogated the cleverest people, agriculturists, cattle-dealers, veterinaries. I am convinced my remarks were never found out by any one. Other persons had various ideas of the indications; some fixed upon the shape of the horns; others on that of the udder; others on the shape, or upon the colour of the hair of the animal; others for this or that other reason. In these different motives of appreciation, all was vague and uncertain.

I was satisfied in the belief that I had made the important discovery of signs positive. To assure myself more and more of the stability of the principle upon which I was about to found my method, I took care to return to the same places at different times and different seasons, to follow up and remark the variations which nature underwent. I made exact notes of my observations; and I flatter myself I collected a mass of experience, which allows me to give a depth to my reasoning, of consistence to my system, and which, at length, will turn into certainty or full assurance that which at first was with me but probable conjecture.

In 1822 I commenced, upon my own account, the traffic in cows. This profession brought to my view cows of all countries—Swiss, Dutch, British, Poitou, &c.; I could more freely examine the signs of these different breeds. I multiplied my experiences, and again I convinced mself that all the individuals which had the same marks belonged to the same family, whatever might be the soil which had given them birth, and that these marks constantly indicate the same degree of superiority or inferiority; that, in a word, Nature, always

like herself, acts at all times, and throughout, in the same manner, and governs herself always by the same laws. During seven or eight years, I was occupied, without relaxation, in putting in order my observations. I established a classification according to the form of the marks; I divided the animals into classes or families, then in each of them I formed a second division, of large size, middle size, and smallest size. At last each size was again subdivided into orders, following the decrease and malformation of the distinctive marks. Immense labour, and which cost me trouble, and care, and loss of time, which can hardly be appreciated, but of which one can form an idea, if you will only think of the immense study of Nature which I was obliged to undertake; of comparisons, of combinations (I was completely ignorant of scientific studies), to put some order into my system, and to form for myself a clear and precise idea of my discovery. These difficulties, which would, probably, have disheartened any other person, did not confound me.

In 1828 I proposed to the Academy, at Bordeaux, to exemplify and verify my system. Nevertheless, I was not then inclined to discover, entirely, my secret, but only to verify the results and the reality of my discovery. The Academy, without adopting my conclusions, made, nevertheless, honourable mention of me, in its sitting of the 5th June following, when it expressed itself thus:—

"M. Francois Guénon, de Lisbourne, possessor of a method which he believes to be infallible for judging, by the simple view, of the goodness of milch cows, and of the quantity of milk which each can give, has begged of the Academy to allow him to endeavour to verify, by reiterated proof, the efficacy of his method. It is hard to strike out a way by which to form a judgment upon this subject, of which the possessor reserved to himself the secret. It appeared difficult to admit that the external signs, whatever they might have been, from which M. Guénon formed his judgment, were always proportionably connected with the quantity of milk to be given. The Academy have thought proper to name a committee, charged with examining it.

"The trials have been made with the care and the precautions necessary to prevent any collusion. They took place on three herds of cattle, and have proved that M. Guénon possesses really a great knowledge in this science. However, as long as his method remains a secret it can neither be appreciated nor recompensed by the Academy.

"From these considerations, the Academy being previously assured that M. Guénon consented to submit to all the proofs which might be required, and to make known his method, provided there was offered to him a just recompense in return, has sent him before M. le Prefet, and it was determined to recommend him to the good will of that magistrate, always ready to second that which tends to any improvement."

Things remained in this state; I did not then decide to place the

public in my confidence; but I did not the less follow my researches and experiences, to make perfect my discovery.

In 1837 the Agricultural Society of Bordeaux wished to convince themselves of the reality of my system: the result surprised the expectations of the society; and the trials that were made, before the committee appointed for the purpose, left no further doubt about the truth of my method. See in what terms the committee expresses itself in its report:—

"AGRICULTURAL COMMITTEE OF BORDEAUX.

"DECOUVERTE GUENON (MILCH COWS).

"*Report to the Agricultural Society of Bordeaux.*

"MESSIEURS—The committee which you have appointed, for the purpose of examining into the discoveries of M. F. Guénon, of Lisbourne, have the honour to submit the result of their observations.

"M. F. G. has established a method, by means of which one can easily know and classify the different kinds of milch cows—1st, as to the quantity of milk they will give each day; 2nd, the longest and shortest time they will hold their milk; and, 3rd, the quality of the milk.

"Up to this time the authors and professors who have occupied their attention upon this subject, have pointed out but very vague marks for appreciating the qualities of cows, more or less adapted for the secretion of milk. After more than twenty years' experience, M. Guénon has been enabled to discover natural and positive signs, which serve as the base of his method henceforth, secure from all error.

"Understanding that your committee must be plainly convinced, and that it would not receive, except with a certain distrust, all appreciations which (in the examination that he proposed to make before it) would not rest on positive facts, M. Guénon has shown at once, and without any restriction, the positive signs upon which he has established his method. With the help of these signs, always exterior and apparent, he has formed eight classes or families, which embrace cows from every part of the country. Each of these classes or families is divided into three sections, comprising cows of the largest size, middle size, and smallest size, which sections are subdivided into eight orders each.

"With the assistance of this classification—clear and simple—any person may know easily, amongst a group or herd of those cows—

"1st. Those that are capable of giving twenty-four quarts of milk per day, and to know exactly the diminution of each, from those that produce nothing, or almost nothing.

"2nd. To appreciate the qualities of the milk, whether it will be buttery, or thin and watery.

"3rd. To know how long the cow will hold her milk, when again in calf.

"This method—so valuable, in whatever way you may wish to apply it, whether as to the produce of milk only, or as serving to improve the breed (as the want of attention in breeding only tends to degenerate more and more)—becomes of the highest interest, when you consider that it applies at once to grown animals and to calves of three months old. Thus, upon the one part, it affords the means of surely judging of the subjects or animals which have reached their developments, of which you have often great hopes, from their breed and their symmetry, but nevertheless whose produce of milk will never

be abundant. On the other hand, it secures the offspring, in warning you to put away at once the calves which will never indemnify you for the trouble and expense of their rearing. Should these results, hitherto looked for in vain, be found out by experience? This is what your committee has to prove. The method of M. Guénon being made known to them, they were anxious to assure themselves as to what point, or how far, the essential signs, which constitute the method, ought or could receive a rigorous application. Consequently, they visited many farms, situated in different localities, for the purpose of examining and deciding upon the different breeds which did not always present the same characteristics.

"They think it right to enter into some details of the manner of proceeding which they followed, persuaded that you could, by this means, better apprehend the merit of the method; and that you will be better able to judge with certainty as to the interest and patronage which you should give to a discovery, which the author submits to you with so much more confidence, because it relates directly to agricultural interests.

"The cows submitted for examination were taken separately. One of the members of the committee wrote down the words of M. Guénon, and immediately after addressed to the owners of the cows (who had been kept quite separate) questions which might either confirm or condemn the judgment given. It is thus that we have examined with the greatest care; and in taking note of the observations made upon all the animals (more than sixty cows and calves), we must declare that the indications given upon each of them, whether as to the quantity of milk, or the time they will give it after being again in calf, or upon the quality, whether more or less buttery or watery, have always been found correct—merely some slight difference in appraising the quantity of the milk, the reason being, as we feel convinced, the difference of food given to the animal, it being either more or less abundant or rich.

"The first trial seemed already, from its results, more than conclusive, when a fresh instance of its success appeared on a second examination, by the presence of M. Guénon's brother. Your committee, taking advantage of this circumstance, caused the cows to be examined by both brothers—but separately; for one having given his opinion, founded upon the system which is common to both, the other, who was studiously kept separate, was called in his turn, and, in absence of his brother, gave his judgment upon the same beast. This manner of proceeding should necessarily lead to some differences and contradictions in the appraising of the cows submitted for their examination, if their method happened not to be positive and certain.

"Well, gentlemen, we must declare that this last experiment has been decisive; for we have had it proved, that not only were the indications given by the brothers Guénon perfectly alike, but they also agreed with the declarations of the owners of the cows, relatively as to all the good qualities, or all the defects of the animals submitted for examination.

"As far as regards the owners of the cows, and the other persons present, these trials were considered of so much more surprising a nature, because they were so equally performed, and because the results were so certain. However, it was easy to perceive that they had little confidence in the discovery, because they did not understand it, and that they attributed the knowledge of M. Guénon merely to his great experience in his observations on cows.

"As far as regards us, to whom the method used was no longer a secret (as we have already said), it is with an interest and an astonishment always increasing that we proceed with these examinations, often repeated, and always exact.

"Two members particularly of your committee, who, from their especial studies, and their physiological knowledge of the domestic animals, are particularly remarkable, have, from the first, felt all the force and all the truth of the system, the fortunate applications of which have been multiplied under our eyes.

"This system, gentlemen, we fear not to pronounce 'infallible;' the signs

which constitute it, always certain, never changing in the position which they occupy, are strongly imprinted upon the animal by nature.

"To appreciate them becomes easy, since it only requires, after having examined them, to find out upon the plate, designed for the purpose, the corresponding signs, to which there is added an explanation, short, but precise, which forms a certain rule for finding out the good or bad qualities of the animal, at the same time that it points out the class and order to which it must naturally belong.

"It is in thus examining the signs, so natural and so positive, upon the animal, and their representation, faithfully pourtrayed on the plate of explanation, that immediately, from the first experience, the members of your committee themselves have been able to apply the method which, as in the case of M. Guénon, has been found justified by the facts.

(Signed) "GUICHENET, Veterinary of the Department of the Dordogne.
"LECONTE.
"F. PELISSIER."

And it is followed by resolutions, afterwards unanimously adopted by the Agricultural Society, at its general sitting, at the Hotel of the Prefecteur, July 4, 1837—

"The society, having heard the report of the committee, decree to M. F. Guénon—

"1st. A gold medal.

"2nd. Subscribers for fifty copies of his work on 'Milch Cows.'

"3rd. Proclaims him member of the Agricultural Society.

"4th. Orders that 1,000 copies of the report of the committee be printed, to be distributed amongst the different societies of France.

"Resolved in general assembly, at the Hotel of the Prefecteur, July 4, 1837.

"The Secretary General of the Society,
(Signed) "RICHIER."

At a general meeting of the Agricultural Society of Aurillac, held on the 26th of May, 1838, this society also renders an account, an extract of which report I proceed to give of the trials I was called upon to make before them:—

"REPORT OF THE CENTRAL SOCIETY OF AGRICULTURE OF CANTAL.

"Yesterday, 25th May, 1838, M. Guénon arrived at Aurillac. He accompanied the members of your committee to the farm of Veyrac, belonging to the president of your society; he examined, with the most scrupulous attention, the fine dairy of cows of this domain, which is composed of one hundred milch cows, of the best kinds in the country. He commenced his trials upon a number of cows that were presented to him, and which had been chosen purposely from amongst the best, the middling, and the worst milchers. M. Guénon gave, upon each of them, separately, precise indications as to the quantity of milk each would give per diem, and the length of time they would hold their milk, after being again in calf.

"We must avow to you, gentlemen, that we have, almost in every instance, agreed with the declarations of the owners of the cows. We have only had to mark some slight differences in the appraising of the quality of the milk. Upon this subject we must observe, that the cows on this property are always well fed with clover, or with other artificial food, which increases considerably the quantity of milk, and which might cause the error of M. Guénon, who foretold a produce of milk a little inferior to that which the cows really have, and who was entirely ignorant of the manner in which the cows of this country are nourished.

"At length, to entirely convince your committee of the truth of this discovery, M. Guénon made known the different signs upon which he established his method. By means of these signs, which are exterior and apparent, and traced by nature upon all the animals, he has formed eight classes, or families, that comprise cows taken from all the provinces; each class he has divided into eight orders, which he has again subdivided into three sections, that comprise cows of the largest, middle, and smallest size.

"From numberless observations, the author has found all cows to belong to one of these classes or families, as also to one of the orders mentioned. Each class possesses some different marks, in form and size, that are very easily distinguished by simple inspection. Accordingly, cows of the first orders of each class are best, and their produce of milk is always proportionate to the order: so that the two first are the most productive, the third and fourth passibly good, and the others the worst, in proportion. M. Guénon has informed us that his system applies equally well to young animals, and that you can judge with certainty their qualities for the production of milk—in fact, he has shown us the same signs on bulls kept for breeding, and upon young calves of three or four months old. The owners of the cows have declared the young heifers, that have been classed in the first orders, to be the offspring of mothers which gave a great quantity of milk. Two superb bulls, of the fine breed of Salers, of equal age, and alike in colour of hair and size, were judged of in a very different manner—one was good, and classed in the first order of the class Flandrines; and the other bad, in the fifth order of the class Carresines.

"This day, 26th May, M. Guénon made fresh experiments, at the market-place of the town of Aurillac, in presence of very many members of the Central Society of Agriculture, and of a great number of proprietors and cultivators of Cantal and of the neighbouring departments. The following is the manner in which your committee thought it right to proceed:—Each cow was examined separately by M. Guénon, who wrote his notes upon a paper, which was folded, and handed to one of us. Immediately after the examination, another member of your committee addressed to the proprietor, or to the person who had charge of the cow, certain questions, relative to the quantity and quality of the milk that the animal gave each day, and how long she maintained her milk after being again in calf. This declaration was compared with that given by M. Guénon. In general his declarations agreed with those of the proprietors, and have proved to the members of your committee, and to every person present, that M, Guénon possesses great ability in discerning the qualities of the animals, and that his system is founded on certain basis. A particular fact has still more confirmed us in this opinion:—A spiteful farmer caused him to examine a second time a cow that he had already passed his judgment upon and classified. The last declaration of M. Guénon agreed perfectly in every respect with that which he had previously written.

* * * * * * *

"Your committee has the honour to propose to you—

"1st. To decree to M. Guénon a gold medal, a l'effigie d'Olivier de Serres, as an encouragement.

"2nd. To proclaim him a corresponding member of the society.

"3rd. To subscribe to twenty-five impressions of his work, which shall be distributed to all the agricultural societies of the department.

"4th. To insert the present report in the 'Propagateur Agricole,' and to send a copy of it to all the prefets and to the different agricultural societies of France.

(Signed) "Le Comte de Saignes,
"G. De Lalaubie,
"Le General Baron Higonet,
"V. De Pruines, Sec. to the Committee."

After these testimonies, so honourable to me, I proceed to publish that which I have prepared in silence, and with much labour. Any person can, with the help of the plates, attached to this work, easily know the distinctive marks of each animal; they are visible on every cow, on the hinder part, between the udder and the bearing.

There are kinds of ecussons of different forms and size, formed by the hair growing the contrary way, or against the grain—sometimes vertically, sometimes transversal—of which the varieties show the class and order to which the individual belongs.

OF COWS IN GENERAL.

Although all naturalists and farmers agree as to the influence which the good qualities or defects of the male and female exercise upon the offspring, it is an essential point, which is too much neglected in the country. They pay little attention to keeping the breeds pure—still less to improving them. They cross, at all hazards, a bull of one class with a cow of another, which, although of the same breed, causes the offspring to fall into a new class still different. However, my experience teaches me that a bull of the largest size, given to a cow of the smallest size, will produce a cross stronger than the mother; but, on the contrary, a good cow, given to a bad bull, will always produce an offspring inferior to the mother. A bull of the first order, of whatever class it may be, given to an inferior cow, will produce an offspring superior to the mother, and, consequently, it will always be much better if, in each class, you bring together beasts of the first order; but if, on the contrary, you ally or bring together beasts of different orders and different classes, an

offspring will be the consequence that will belong neither to the class of the father nor of the mother, but will fall into another class and another order, which no one could know but by the characteristic signs which must be laid down, and which I shall point out directly. Each class has its bastards—that is to say, individuals which, although resembling the original classes, differ very much in their produce of milk. This resemblance is a continual source of error, and I shall point out the signs by which the bastard race can be known.

It is, then, very essential not to give cows except to bulls of good quality. The marks upon the bulls are the same as with the cows, but these marks are more contracted on the bulls.

My remarks rest upon exterior signs, apparent in all. The signs are altogether independent of the colour of the hair, which is not of the slightest consequence in classifying, and which, at the very most, can only be indicative as to what country the animal may belong. Their qualities differ, not in consequence of the skin, but from the characteristic signs of which I have already spoken.

The deterioration of the breeds must be, in some degree, attributed to the influence of climate; for although, generally speaking, the bad kinds are much more frequently met with than the good, there are, nevertheless, countries where the latter abound more. So, cold countries agree better with cows of all kinds, and all classes. The cows of Flanders, Holland, England, and Scotland, excel those of France, and much more those of Spain, in the quantity and quality of their milk; but everywhere, and always, the two first orders are the best, and from which you ought to breed, in order to obtain the most abundant produce of milk. It must, however, be acknowledged, that even in the most favoured countries, you will always find the inferior kinds. To diminish the number, and to improve, as much as possible, even the best kinds, should be the constant aim and only look-out of the breeder and farmer. Farmers and agriculturists cannot pretend to change the nature of the climate, but they can avoid the crossings which deteriorate the breeds. How many farmers even to-day, keep, or have kept for many years, heifers, whose produce of milk they expected would have indemnified them for their care and expense, which, after long waiting, see all their hopes vanish, and find a considerable loss, where they hoped to have found a little treasure! How many others have placed in the hands

of the butcher, the young heifer which would have amply recompensed them for their trouble and care; whilst, by a little attention and experience, they could have known the former, which in reality gave them hardly any produce, and whose offspring must prove of an inferior kind! This is one of the disappointments which we would desire to avert from those who are breeders of cattle, by giving them a sure means of knowing, even amongst the youngest calves, those from which you have nothing to expect, and those from which you can expect, with confidence, a rich and abundant milk.

Hitherto, agriculturists only paid attention, in the breeding of cattle, to the shape, size, deportment, or breed. The result of this system must always be doubtful, and which must necessarily lead to a deterioration of the race. The signs or marks are often deceptive; and to those who doubt it, we shall say, allow us to make comparison between our race and that of cattle. How many men and women are there of the finest make, upon whom it is delightful to look, to whom nature has refused the power to increase their race? How many children are born from robust parents, pitiful, without vigour, without any apparent strength? How many are born with a dull and backward spirit, of parents who are far from these faults—who were even remarkable for the subtilty of their imagination? There are cows which have the finest appearance, in their strength, size, skin—nothing apparently wanting to make them perfect; but they give none or very little milk, and even that is watery and thin.

All cows should have their hair short; the head short and square; the eyes large; the udder slightly falling (*allongi*), round, and covered with a little downy hair; the rump high. In general, cows which have four teats, equal in size, are the best. However, those which have six, of which four are equal, and two others less long (these latter, in general, give no milk), are also very good, and abundant in produce of milk.

I have remarked that, in the inferior orders, cows have often four teats, and a small nipple, but that these teats are always unequal, and that the udder is also very often covered, not with a down, but with a coarse and thin hair. I give the name *ecusson* or *gravure* to the marks or signs by which I distinguish the cows of each class.

This ecusson or gravure is distinguished by the hair, of which one part, throwing itself out from the middle of the four teats as the centre, extends itself under the belly, in the direction of the navel, whilst the

other part, growing up a little above the houghs, and flowing over upon the thighs, rises behind and extends itself up to the bearing, in certain classes. The epis (literally an ear of corn, but here a beard of hair, or tuft of hair, formed by the hair growing the wrong way on the right and left of the bearing) have their own properties; they correspond with the hollow or reservoir of milk, placed in the interior of the beast, and which is always in exact accordance with these epis. If the ecusson or gravure be large, the reservoir of milk will be large, and, consequently, the produce abundant; and, on the contrary, if small, the reservoir will be small.

According to their width and length these epis, which are unequal, indicate the bastard cows in each class and in each order—in short, if they are too wide, they cause the loss of milk when the cow is again in calf, and more or less rapidly in proportion to the size. The longest epis indicate the most rapid loss of milk. The finest epis, composed of a hair short and silky, are the best. The epis of a coarse hair, stiff or bristling, are the worst; for they indicate either a great loss of milk or a milk watery and thin. We may say, then, that the cows whose gravure or ecusson is formed of the finest hair are the best, particularly if they have, from the inside of the thighs up to the bearing, the skin of a yellowish colour, and if the kind of bran or powder which comes off this skin be of the same colour. The cows in which these marks extend themselves to the bunch at the end of the tail, and whence falls a yellow powder or bran, will give very rich and buttery milk, whatever quantity they may give each day, and to whatever class or order they may belong. All cows whose skin is smooth and white, whose udders are covered with thin hair, and the hair which grows the wrong way on the epis of the gravure forming a long ecusson, will always give a watery and poor milk. The cows which have their udders covered with a hair short and furry, and fine in the epis of the hair, growing the wrong way in the ecusson, will give rich and good milk. These marks or ecusson are subject to some little variations in their size, colour, or produce.

When the gravure, which is well marked on each cow, shall belong to the first or second order, or whatsoever class it may be, and that, nevertheless, there shall be a barrenness of hair growing upwards, replaced by hair descending, the cow will be degenerated to the extent of one or even two orders, according to the size of the barren-

ness of hair growing up, which the gravure will show. When the gravure shall be wider above than below, it causes degeneration to the extent of one order.

All the defects of gravure, which are found on the right and left of the thighs or bearing, indicate always a scarcity of milk, according to the size, because, as I said before, the epis thus placed correspond with the reservoir of the milk within—the scarcity or barrenness of hair growing up: the deformities which are found in these epis denote analogous defects in the lactiferous vessels.

The same defects or barrenness of hair correspond, also, with the lactiferous vessels, which are below and on each side of the belly of the cow, passing nearly to the height of the navel, according to the order. These vessels terminate in a small hole, into which you can place the top of your finger. In the cows of the first orders of each class, these vessels or veins are tortuous or varicose; proceeding from the udder they form a fork, one greater and the other less, and both terminate from three to four inches apart; the hole of the second is smaller and less deep than the first, which I call *maitre vasseani*. In the inferior orders you will find these vessels to be straight, and that the hole where they terminate is smaller and less deep, according as the cow is, or may be, of a more inferior order.

In general, then, there is a barrenness, such as I have described, in the ecusson on the right and left of the thighs; it corresponds with the lactiferous vessels which are found below the belly. It is easy to convince one of this relation between these two parts of the animals by one feeling the vessels or veins; for you will always find that, upon the side where there is the default or barrenness in the ecusson, the lactiferous vessel is smaller, and the hole where it terminates smaller and less deep than on the side where there is no barrenness or default.

All the cows of the first orders of each class, which have the gravure well characterized, will have the quantity of milk which I shall, by and by, point out. But those that show a defect in the contrepoil of the gravure, whatever may be its direction, or of hair growing down amidst that which grows upwards—all these cows, defective in the gravure, show a degeneration and a default of produce of milk. This shall be more fully explained.

In speaking of each class in particular, and of the bastards which belong to them, I shall make every effort to explain as fully as possible,

in theory, for I regard these principles as of the highest importance.

When the cows are far advanced in calf, a few days before calving and particularly at the moment of calving, the epis formed by the contrepoil enlarge themselves everywhere, as a flower which is going to blow. Then the beast being ready to calve, the lactiferous vessels distend, and dispose themselves to give the greatest force of milk in the first days of calving; but a few days after the epis of the contrepoil contract themselves, as before. It will be remarked that the epis of bristling hair, at the time of calving, are then of an extraordinary size or width, both those on the right and left of the thighs as well as those on the right and left of the bearing; but a few days after calving they contract about one-third. To judge of the quantity of milk which a cow ought to give, one must not judge by the produce of the first few days after calving; for, in the first orders, there may be a natural inflammation of the lactiferous vessels, which may be greater in one cow than in another, and which may impede the flow of milk; while, in the inferior orders, a great number of cows, which are in flesh, instead of having much milk in a large udder, have often only a mass of proud flesh, which absorbs the milk, the place of which it fills up. The presence of this flesh internally can easily be known by the contrepoil on the right and left of the bearing. These epis, as I have said, show, according to their form and size, the abundance or the scarcity of milk in each class and each order.

The distinctive marks in the cows or the heifers, in good order, are much more apparent and developed than in those which are thin and in bad condition, when the characteristic signs are more contracted; nevertheless, whatever may be the bad condition, the signs are always visible and easy to be distinguished.

All the amateurs and possessors of cows, who would know the classification which I have established, must follow the degrees as I have done, remarking that, in classifying, it is necessary to seek out the proportion of the size of the cow—that is to say, if by its make it is applicable to the largest, middling, or smallest size. Attending to this proportion the produce will be known, and no error will be committed; for whatever may be the order of the animal, the signs being always those of the original class, one will see by those signs to what order it belongs, and will then know exactly the produce it will give, just as if you had seen her proved for some months.

I have said that, when copulation takes place between subjects of different classes and different orders, there will be a cross which belongs neither to the class of the father nor of the mother. It happens, then, that the characterictic signs of the cross differ from those of the parents, and are cast into another class. To understand exactly in what category one ought to place them, you must assist the classification, in seeking out the gravure or ecusson which, by its resemblance, approaches nearest. Should you not find it sufficiently clearly characterized, you must place it in the first order, but always in the class to which it has most resemblance. By this means one knows, with a slight difference, what produce the cow gives or will give each day, the time she will maintain her full milking, and the diminution when again in calf. Cows on good pasture will, of course, give much more milk proportionally to their class and order than those on poor ground.

Cows which calve in good season (spring) will give more milk than those which calve in winter.

From the first to the last order, I have stated the produce rather below the mark—that is, if the cattle be well fed and attended to. It is necessary to feed cows well while they are in full milk, and to begin to stint them in feeding when the milk begins to decrease and when they are advanced in calf. They should be milked twice a day, at regular hours, and drawn dry each time. Cows of the first and second orders of each class should be milked three times a day, when they have first calved. The dairywomen and those who have charge of the cows must take great care not to give too much food, because of the stoppage which it might occasion to the milk—a stoppage which often causes the loss of both cow and calf. This comes from the inflammatory obstruction which takes place in the udder, and the pain in all the lactiferous vessels. The hair growing the wrong way, which forms the ecusson or gravure that indicates the class and order, distends itself, and grows large some days before and after the moment of calving. It is necessary, then, that, for the first few days, the cows should be well cared for, and should get nothing but light food. Five or six days afterwards they may get their natural food without any risk; because then the course of the milk will be fixed and determined, and the milk-vessels well dilated. Cows of the inferior orders are exempt from all these kinds of maladies.

When you would rear calves to replace the old cows, you must

choose a bull that will agree with the best cow you can find of the same class and order, as nearly as possible; then you will produce a good breed, whose produce will invariably accord with that of the parents. For the preservation of the cows, it is necessary not to neglect to lead them to the bull when they are in season, because, when they have passed their season two or three times, without being bulled, they are subject not to hold the bull; then you lose good cows, the milk of which is gone, and they are only fit for the butcher.

SOME PARTICULAR DESCRIPTIONS OF COWS.

I HAVE said that I have established a classification, and you may imagine what time it has taken to form it; for I do not write a natural history, but the result of my personal observation and experience. I only followed the progress of my discovery, and as order was formed in my mind I proceeded. I gave new names, which accorded with my ideas, and which would designate the figures or shapes of the ecusson of each class. I have divided the cows into eight grand classes or families, each of which is composed of eight orders and three degrees of size. All cows, whatever they may be, will be found in one of these classes and in one of these orders. Each class gives a certain quantity of milk, according to the order and size. It possesses its peculiar mark or ecusson, which will be known in all the orders, with the modifications, according to the degree to which the animal belongs.

I call the cows of my

First class	Flandrines.
Second class	Lisiére.
Third class	Courbelines.
Fourth class	Bicornes.
Fifth class	Poitevines.
Sixth class	Equerrines.
Seventh class	Limousines.
Eighth class	Carrésines.

With the aid of the plates, of which I have spoken, amateurs and breeders can, at the first glance, know to what class and to what order such or such an animal belongs, and, consequently, to judge exactly what produce it will give each day, and the time such cow

will hold its full milking. The quantity will vary sometimes, because, as I have stated, the climate, the feeding, and the season of calving must exercise an influence, more or less favourable. But what can never vary—that which is always certain—is, that everywhere, and at all times, the cows of the first order of each class are always the best and the most abundant in milk, and that all the other orders follow in the same proportion; so that the produce of the cow of the eighth order must be regarded as almost nothing.

You will find bastard cows in all the classes; they resemble individuals of the same classes, sometimes so nearly that the difference is very trifling; but still it will always be discernible to the eye.

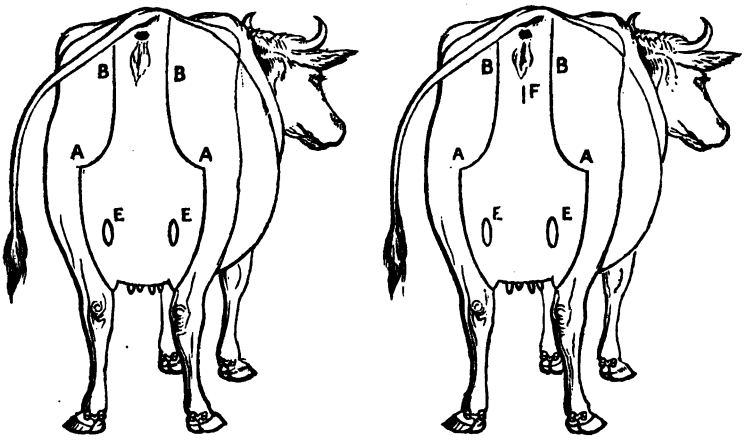
The bastard cows have this peculiarity, that they give milk until again in calf; but when arrived at that state, they lose their milk immediately, or at least a very few days afterwards. Sometimes they are great milkers when first calved; sometimes, on the contrary, they have great appearance of milk, but give a miserable quantity and quality. When the quantity is great, the quality is wretched; and, on the contrary, when the quality is good, the quantity is almost nothing.

EXPLANATION OF THE PLATES.

FIRST CLASS—FLANDRINES COWS.

The names which I have given to my classes are purely arbitrary, and answer simply to my ideas. I have given to the cows of my first class the name of Flandrines, because the cows of that class are the best in our provinces, and that the race of cows of Flanders, known generally by their good qualities, possess the characteristic signs (generally, at least,) which distinguish this first class. These cows, which I call Flandrines, are the most productive and the most abundant in milk, but they are the most rare in our provinces. Each order of this class, as in all the others, allow of some particular differences in the general mark of its class, and will give a different product in all the degrees, as I shall explain. I call cows of the largest size those which weigh from 7 cwt. upwards; of the middle size, from 4 to 7 cwt.; and those of the smallest size, under 4 cwt.

LARGEST SIZE.



First Order—No. I. Second Order—No. II.

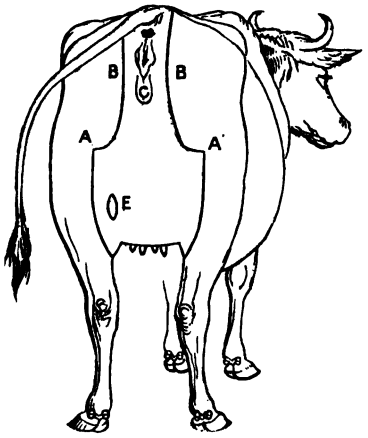
FIRST ORDER—NO. I.

The cows of the first order of this class, and of this size, give, in their full milking, about twenty-four quarts per day—that is, until they are again in calf. From that time the quantity of their milk will diminish very gradually, but they will maintain their milk until they have gone eight months in calf. In fact, the cows of this class, and of this order, never run dry, if they are always regularly drawn or milked. You can recognise cows of this class, and of this order, by their fine udder, covered with very small hair or down, which grows upwards from the middle of the four teats, all over the hinder parts of the udder, within and above the two hams and the thighs, stretching out to the right and the left, to the points marked A A, closing together towards the points marked B B, of which each is distant about $3\frac{3}{4}$ inches from each side of the bearing. There are generally, above and behind the hind teats, two small, oval marks, formed by the hair descending or growing downwards, marked E E, each about 2 inches wide and 3 inches long. This mark is distinguished by the colour of the hair—more bright in the hair which grows downwards than in that which grows upwards.—See plate 1, order 1. The first order of this class has also the interior of the bottom of the thigh, up to the bearing, of a yellowish colour, generally mixed with a number of black spots: it loosens or comes off like bran or dust. All cows that have their gravure or ecusson

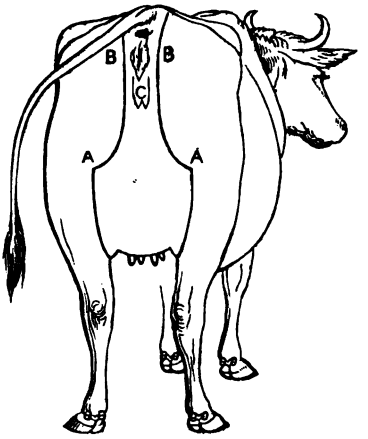
of those of the first class, will belong to that family, notwithstanding their colour and their breed.

SECOND ORDER—NO. II.

The cows of this order give, in their full milking, twenty quarts per day, and hold their milk until they are eight months gone in calf. The marks of this order exactly resemble those of the first, and are designated by the same letters, except that they have some soft hair growing downwards on the right, near the bearing, marked by the letter F. This mark forms an ecusson, which is about 2¼ inches long, and not quite half an inch wide. It is distinguished by a little hair, very short, and indicates a diminution of the produce of milk of about three quarts each day.



THIRD ORDER—No. III.



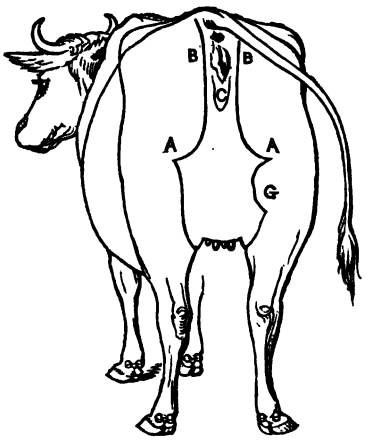
FOURTH ORDER—No. IV.

THIRD ORDER—NO. III.

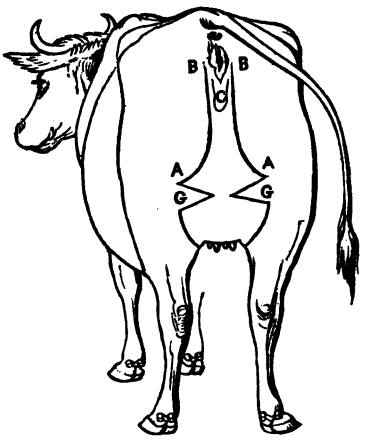
The cows of this order give sixteen quarts a day, and maintain their milk until they are seven months gone in calf. The form of their gravure resembles that of the preceding orders, except that there is a half circle of hair growing downwards, and which enforks the bearing, extending itself below about 1½ inch, being 2¼ inches wide. This mark is designated by the letter C. The colour of the hair growing down is distinguished by its brightness; it is whiter than the hair which grows upwards. There is only one oval, on the left side, above the teats, marked E.

FOURTH ORDER—NO. IV.

The cows of the fourth order give fourteen quarts of milk a day, and hold their milk until six months gone in calf. This order differs from the others, because the hair which grows upwards has not so wide a surface. The points A A are narrower under the thighs; the points B B are nearer the bearing, from each side of which they are about half an inch distant. On leaving these points, B B, you find hair growing downwards, which surrounds the bearing, and forms two triangles, marked C. These triangles are distinguished, also, by the brightness of the hair, which is whiter than the hair that is growing upwards.



FIFTH ORDER—No. V.



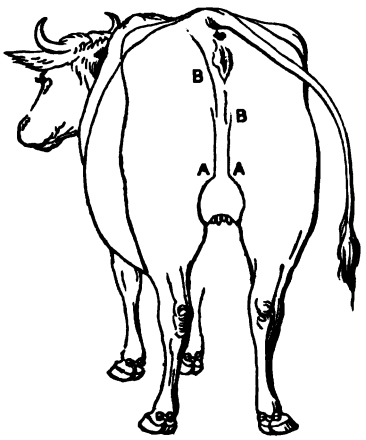
SIXTH ORDER—No. VI.

FIFTH ORDER—NO. V.

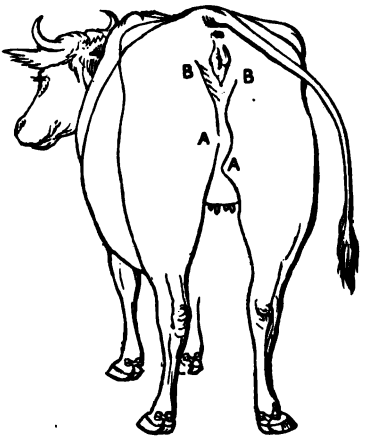
The cows of the fifth order give twelve quarts of milk per day, and hold their milk until five months gone in calf. The gravure of this order is a little more closed together at the points A A and B B than in the preceding order. Below the bearing is a line of hair growing downwards, about 6 inches long, by $1\frac{1}{8}$ inch wide, and marked by the letter C. This gravure is known, also, in the hair growing upwards, replaced by some hair growing downwards on the right side, and which sinks into the bottom of the thighs, about 6 inches, marked by the letter G.

SIXTH ORDER—NO. VI.

The cows of this order give nine quarts of milk per day, and hold their milk till four months gone in calf. The gravure of this order has the same form as that of the fifth order, but it is closer together at the points, A A. There is a bareness of hair, which, instead of growing upwards, sinks itself between the thighs, and is nearly four inches long, and about two inches wide. This bareness is marked, as above, by the letter G; and below the bearing the mark is the same as that of the fifth order, marked C.



SEVENTH ORDER—NO. VII.



EIGHTH ORDER—NO. VIII.

SEVENTH ORDER—NO. VII.

These cows give six quarts of milk per day, and hold their milk till three months gone in calf. The gravure of this order differs from those preceding, in that it is well characterized on the left side, at the points A and B. On the right side you will find some hairs bristling across; and from the point A, on the right, the gravure declines and sinks exactly *between* or in the middle of the thighs, in extending itself towards the bearing. These cows have generally the udder covered with coarse and hard hair.

EIGHTH ORDER—NO. VIII.

These cows give four quarts of milk per day, and hold their milk for two months after being again in calf. The gravure of this order has the same form as that of the seventh order; but it is more low,

and closes more together at the bottom of the thighs; some hairs, at a distance from one another, extend to the right and the left, bristling or standing on end.

What I have said of the distinctive marks of the orders applies equally to all the corresponding orders of sizes—largest, middle, and smallest—of the same class; but in following the degree of proportion of cows thus, it will be understood, that what I have said of the characteristic signs of each class, and of each order in particular, will apply to all the orders and all the degrees of each of these classes. I pass, then, to the other sizes of the first class, of which I shall only point out the produce of milk for each day.

MIDDLE SIZE.

FIRST CLASS.

First order give eighteen quarts per day, and hold their milk until eight months gone in calf, undergoing, as in the largest size, a gradual diminution.

Second order give fifteen quarts a day, and hold it until seven months gone in calf.

Third order give thirteen quarts a day, and hold it until six months gone.

Fourth order give ten quarts a day, and hold it until five months gone.

Fifth order give eight quarts a day, and hold it until four months gone.

Sixth order give five quarts a day, and hold it until three months gone.

Seventh order give three quarts a day, and hold it until two months gone.

Eighth order give two quarts a day, and do not hold it after being again in calf.

SMALLEST SIZE.

FIRST CLASS.

First order give twelve quarts a day, and hold it until eight months gone in calf, but always with a gradual diminution.

Second order give ten quarts a day, and hold it until seven months gone in calf.

Third order give eight quarts a day, and hold it until six months gone.

Fourth order give six quarts a day, and hold it until five months gone.

Fifth order give four quarts a day, and hold it until four months gone.

Sixth order give three quarts a day, and hold it until two months gone.

Seventh order give two quarts a day, and hold it until one month gone.

Eighth order give one quart a day, and do not hold it after being again in calf.

To follow the thread of my ideas, and of my observations, it is necessary at once to attach to each class the particular description of the bâtardes or mongrels which belong to it.

I am, therefore, going to describe here the bâtardes Flandrines. I only describe the bâtardes of the largest size. In the other sizes, it is necessary to diminish the proportion of the marks according to the individual order; the characteristic signs being the same for every class, apply to all the orders of the same class.

The Flandrines cows have two kinds of bâtardes—The first has an oval of hair growing downwards, in centre of the one which goes up, marked by the letter J, in the middle, and between the two hips, below and opposite to the bearing, at a distance of about 8 inches. This oval is about 4 inches long, and $2\frac{1}{2}$ inches wide. The colour of the hair growing downwards, is always whiter than that which grows upwards. The greater the size of the oval, the sooner there will be a falling off of milk; the smaller the oval, the loss of milk will be less sensible, but it will take place, nevertheless. The gravure is the same as that of the first order of the class, and marked by the same letters.

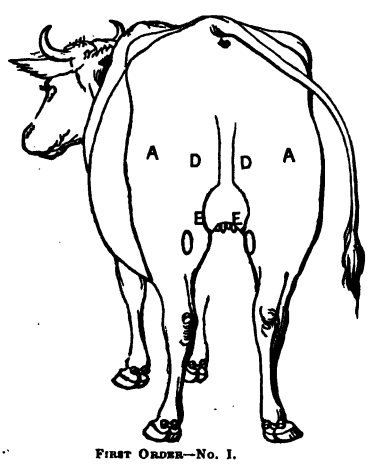
The bâtardes, No. 2, possess the same characteristic of gravure as the cows of the first order of the original class; but the hair which forms the gravure or ecusson, instead of rising vertically towards the bearing, bristles like the beard of an ear of corn, and overflows or turns over on each side upon the thighs, upon the points A A.

The ecussons of the greatest size and the finest hair denote the most abundant milk. When the hair is coarse, long, and thin, it denotes a poor milk. The interior of the thighs up the bearing is of a reddish colour, and the skin fine to the touch.

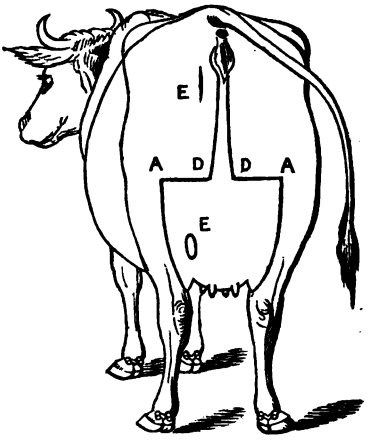
SECOND CLASS—COWS A LISIERE.

The form of gravure or ecusson of this second class is very different from that of the first. This gravure is marked by hair growing upwards, in the form of a selvage or list of cloth, which rises vertically, and terminates at the bearing, without any interruption of hair growing downwards in this part. That is what has determined the name which I have given to cows of this class.

LARGEST SIZE.



First Order—No. I.



Second Order—No. II.

FIRST ORDER—NO. I.

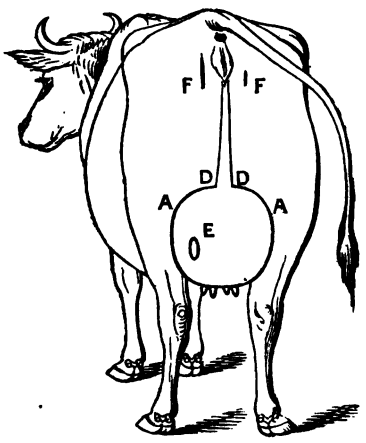
The cows of the first order of this size give, in their full milking, nineteen quarts of milk per day, and hold their milk until eight months gone in calf. Like the cows of the first order of the first class, they never go dry, if you wish always to draw them. Those which belong to the largest size, and to this first order, have a fine udder or dug, covered with small down, which grows upwards.

The gravure springs from the middle of the four teats, extends itself within the thighs, and rises, in overflowing, upon the points A A. From these points a transversal right line plunges itself, or runs deep into the thighs, at the points D D, distant from one another about four inches. Thence a right line rises vertically to the bearing,

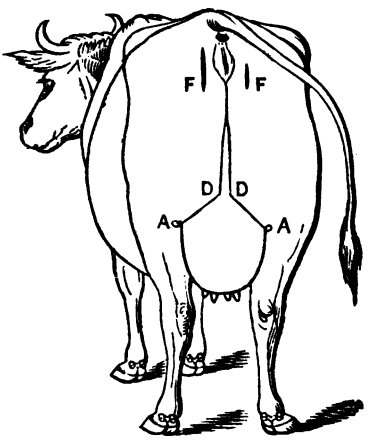
where it terminates itself by a breadth of $1\frac{1}{2}$ inch. Above, and opposite to the hinder teats, you will find two ovals of hair growing down, which are nearly as large as those of the first order of the first class: they are also distinguished by the brightness of the hair growing downwards, and marked by the letters E E. In the first order of the cows à Lisiére, as in the first order of the Flandrines, the bottom of the thighs in the ecusson is of a yellowish Indian colour.—See plate 2, order 1.

SECOND ORDER—NO. II.

These cows give sixteen quarts of milk per day, and hold their milk till seven and a half months gone in calf. Their gravure has the same form as that of the first order. The points A A are lower, and all the mark is narrower or more contracted. There is a small ecusson of hair growing upwards, to the left of the bearing, marked by the letter E, and which is about $2\frac{3}{4}$ inches long, by not quite half an inch wide. All the gravure is distinguished by the brightness of the hair (*contrefoil*) growing the contrary way, or against the grain. There is only one oval above the teats, on the left side, behind, marked also by the letter E.



THIRD ORDER—NO. III.



FOURTH ORDER—NO. IV.

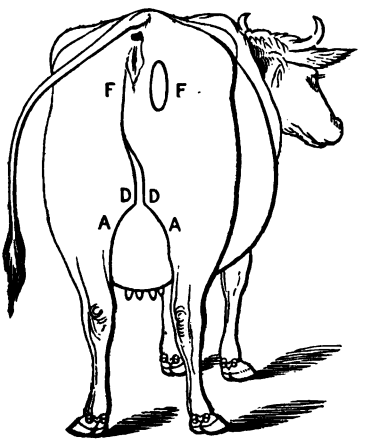
THIRD ORDER—NO. III.

These cows give fourteen quarts a day, and hold their milk until

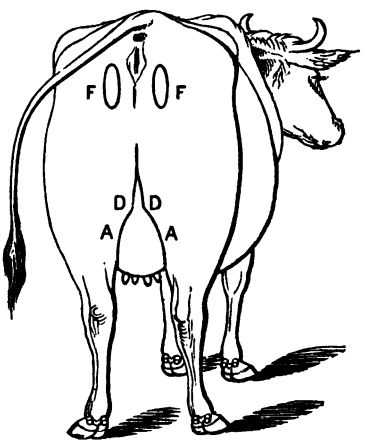
six months gone in calf. The marks are the same as those of the first order, but the points A A are nearer to D D, and from the points D D, in growing upwards, the gravure forms an acute angle, which terminates at the bearing, to the right and left of which you will find two little ecussons, marked F F, same size as those of the preceding order; however, the ecusson on the right is shorter than that on the left by about an inch or an inch and a half. There is only one oval on the left, above the teats, behind, marked E.

FOURTH ORDER—NO. IV.

These cows give twelve quarts of milk per day, and hold their milk until four and a half months gone in calf. They have the same mark as the preceding order, except that the line from the points A A is lower than the points D D. The two ecussons to the right and left of the bearing are larger and wider, by three-fourths of an inch, than the preceding order, and there is no oval above the teats.



FIFTH ORDER—NO. V.



SIXTH ORDER—NO. VI.

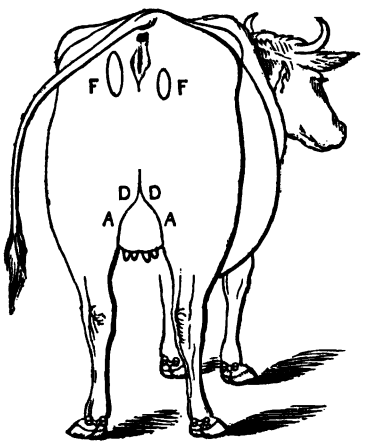
FIFTH ORDER—NO. V.

These cows give ten quarts of milk per day, and hold their milk until three months gone in calf. The mark is more contracted than in the fourth order. The points D D are much more close, being

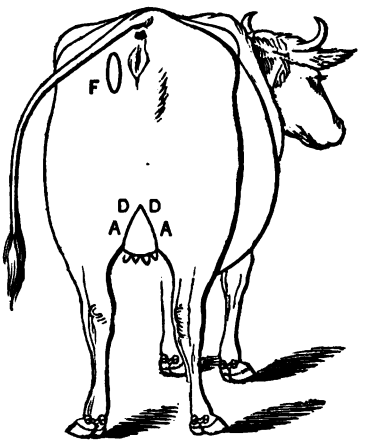
separated only three-fourths of an inch. The lisiére or selvage grows upwards, terminating in a point very narrow at the bearing, to the left of which it turns to the point F. There is only one ecusson on the right, marked also F, 6 inches long by 1½ inches wide.

SIXTH ORDER—NO. VI.

These cows give eight quarts of milk per day, and hold their milk until two months gone in calf. They have the same mark as the preceding order, but still more close or contracted. The line going up is of very little width, and disappears (in the middle) at about 4 inches in length. There are two ecussons, marked F F, of the same length and size, very nearly, as those in the preceding order.



SEVENTH ORDER—No. VII.



EIGHTH ORDER—No. VIII.

SEVENTH ORDER—NO. VII.

These cows give six quarts of milk per day, and hold their milk until one month gone in calf. The mark is still lower down, and more narrow than in the preceding order. The line going upwards contracts itself or closes together, so that it disappears. There are two ecussons, marked F F; that on the left is 7 inches

long by 1½ inch wide, formed by coarse hair, which turns across outside the thigh; that on the right is 4 inches long, by 1½ inch wide; the hair has the same turn as that on the left.

EIGHTH ORDER—NO. VIII.

These cows give four quarts of milk per day, and hold their milk only until again in calf. The mark is more and more contracted. There is only one ecusson on the left, marked F, formed by some hair, which turns across. What has been said of the orders of the *large size* applies exactly to each of the eight orders of the two other sizes, with regard to the properties of each of them. This observation, which I repeat here, extends to all the other classes.

MIDDLE SIZE.

SECOND CLASS.

First order.—The cows of this order give sixteen quarts of milk per day, and hold it till eight months gone in calf.

Second order give thirteen quarts a day, and hold it till six and a half months gone.

Third order give eleven quarts a day, and hold it till five months gone.

Fourth order give ten quarts a day, and hold it till four months gone.

Fifth order give eight quarts a day, and hold it till three months gone.

Sixth order give six quarts a day, and hold it till two months gone.

Seventh order give four quarts a day, and hold it till again in calf.

Eighth order give three quarts a day, and hold it till again in calf only.

SMALLEST SIZE.

SECOND CLASS.

First order.—The cows of this order give eleven quarts of milk per day, and hold it till eight months gone in calf.

Second order give eight quarts a day, and hold it till six and a half months gone.

Third order give six quarts a day, and hold it till five months gone.

Fourth order give four quarts a day, and hold it till four months gone.

Fifth order give three quarts a day, and hold it till three months gone.

Sixth order give two quarts a day, and hold it till two months gone.

Seventh order give two quarts a day, and hold it till again in calf only.

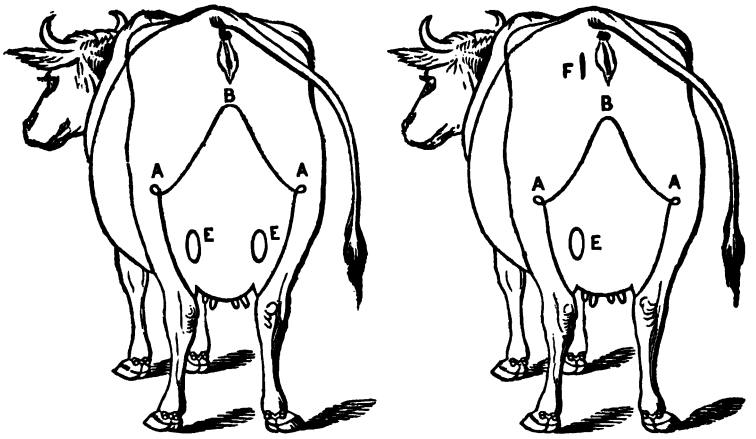
Eighth order give one quart a day, and hold it till again in calf only.

The bâtardes or mongrels of this class, to whatever size or whatever order they may belong, are known when they have two ecussons of hair growing upwards, upon the right and left of the bearing, marked F F.

These ecussons are altogether separate from the bearing; distant from it about 1 or 1½ inches on each side; they are 4 or 4½ inches long, and from 1 to 1½ inches wide. The smallest, and those that have the hair most fine, show that the loss of milk will be more gradual. When the ecussons are pointed or sharp at both ends, and of a coarse hair, they indicate a watery, thin milk.

THIRD CLASS—COURBE LIGNES (CROOKED LINES).

This name has been given to the cows of the third class, because their gravure, which resembles a lozenge, is formed by a crooked line, which goes from the right to the left, and joins on going upwards, near the bearing, about three-fourths of an inch below it. This gravure or ecusson, formed by the hair growing up against the grain, resembles a heart.



First Order—No. I. Second Order—No. II.

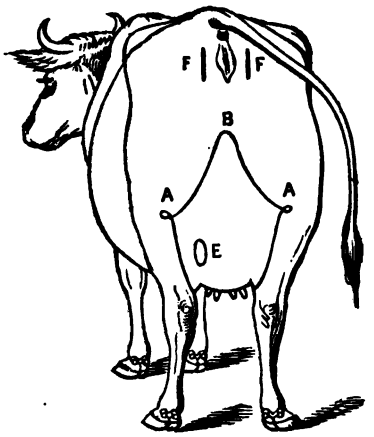
LARGEST SIZE.

FIRST ORDER—NO. I.

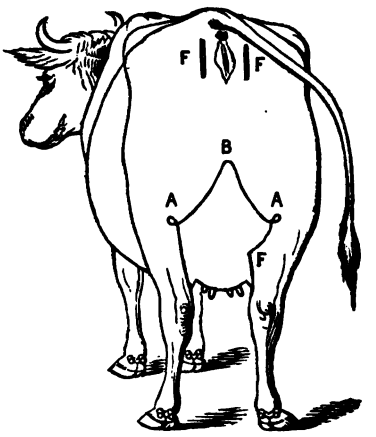
The cows of this size and of this order give, in full milk, eighteen quarts a day, and hold it till eight months gone in calf. They have the same firmness and the same yellowish (Indienne) colour in their gravure or ecusson as those of the first orders of the preceding classes. The mark is wider in the upper part than in the second class. It commences in the centre of the four teats, and grows up, within and above the houghs, flowing over the right and left to the middle of the thigh, on the points A A: and departing from these points there rises on each side a crooked line, which terminates at B, about three-fourths of an inch from the bearing. Above and opposite the hind teats there are two ovals of hair, growing down, marked E E.—Plate 3, order 1.

SECOND ORDER—NO. II.

These cows give sixteen quarts of milk a day, and hold their milk till seven months gone in calf. The form of the gravure is the same as the first order, but slightly more narrow or contracted in every part. To the left of the bearing there is an ecusson of hair growing against the grain, marked F, 1½ inches long, but not quite half an inch wide. This gravure is marked by the same letters as that above, but there is only one oval, on the left, above the teats.



THIRD ORDER—No. III.



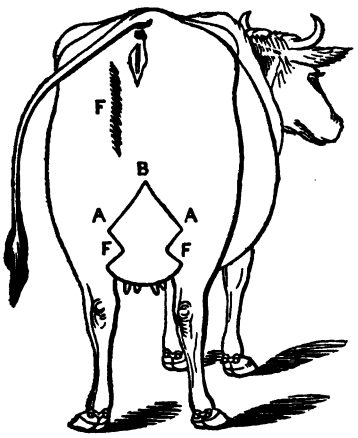
FOURTH ORDER—No. IV.

THIRD ORDER—NO. III.

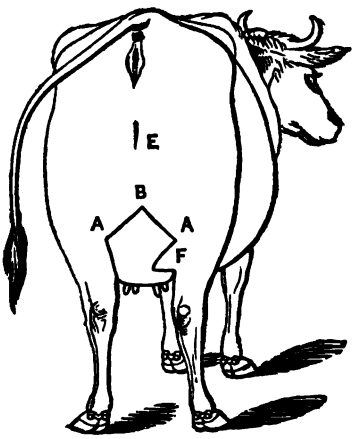
These give fourteen quarts of milk a day, and hold their milk till six months gone in calf. The mark is the same as in the second order, and marked by the same letters, and is slightly more contracted. There are, to the right and left of the bearing, two beards of hair or ecussons, growing upwards, marked F F, about 4 inches long and three-fourths of an inch wide. Above the teats, on the left side, there is an oval, marked E. The point B is lower than in the second order.

FOURTH ORDER—NO. IV.

These cows give twelve quarts of milk a day, and hold their milk till four months gone in calf. The mark is always the same, but it is more contracted and lower below the bearing. The beards of hair on the right and left of the bearing, F F, are longer and wider than in the third order, and they bristle on flowing over on each side. To the right, below the letter A, there is a scarcity or bareness of hair growing up, replaced by hair growing down, F.



FIFTH ORDER—NO. V.



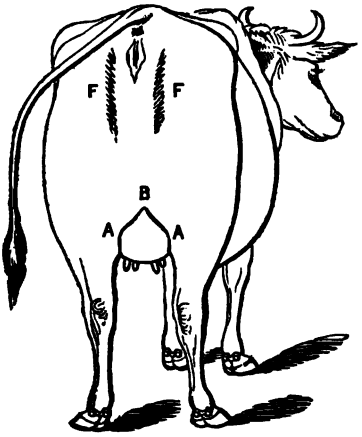
SIXTH ORDER—NO. VI.

FIFTH ORDER—NO. V.

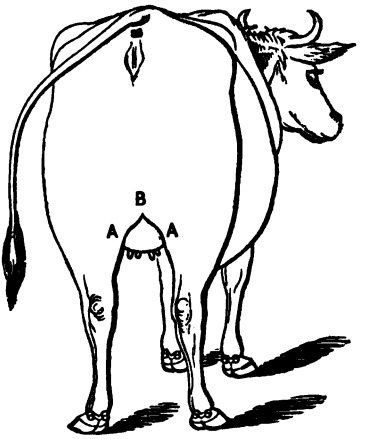
These cows give nine quarts a day, and hold their milk till three months gone in calf. The mark is still lower, and more contracted at the bottom of the thighs. There is on the left a bunch of hair, bristling and growing upwards, marked F, about 7 inches long and 1½ inches wide. Going from the point A, on the right and left, you will find two barenesses or scarce places of hair growing upwards, marked F F, which sink into the thighs, about 6 inches long and 4 inches wide.

SIXTH ORDER—NO. VI.

These cows give seven quarts a day, and hold their milk till two months gone in calf. The mark is always the same; but the letter B is lower below the bearing, and more contracted at the bottom of the thighs. At the point E there is a little line of hair growing upwards, 1½ inches long by three-fourths of an inch wide; it is situated below the bearing. On the right, below the point A, is a bareness or scarcity of hair growing upwards, marked F.



Seventh Order—No. VII.



Eighth Order—No. VIII.

SEVENTH ORDER—NO. VII.

These cows give five quarts of milk a day, and only hold it till again in calf. The gravure or mark is still lower, and more contracted at the bottom of the thighs. To the right and left of the bearing there are two ecussons or bunches of hair, marked F F; the hair is bristling, and flows over or spreads on each side; they are about 6 inches long and $2\frac{1}{4}$ inches wide.

EIGHTH ORDER—No. VIII.

These cows give three quarts of milk per day, and only hold it till again in calf. The mark is of the same form as in the seventh order, but always more low. In fact, there is hardly any mark.

MIDDLE SIZE.

THIRD CLASS.

First order.—The cows of this order give sixteen quarts a day, and hold their milk till eight months gone in calf.

Second order give thirteen quarts a day, and hold it till seven months gone.

Third order give eleven quarts a day, and hold it till six months gone.

Fourth order give nine quarts a day, and hold it till five months gone.

Fifth order give seven quarts a day, and hold it till four months gone.

Sixth order give five and a half quarts a day, and hold it till three months gone.

Seventh order give three and a half quarts a day, and hold it till two months gone.

Eighth order give two quarts a day, and only hold it till again in calf.

SMALLEST SIZE.

THIRD CLASS.

First order.—These cows give twelve quarts of milk per day, and hold it till eight months gone in calf.

Second order give ten quarts a day, and hold it till seven months gone.

Third order give eight quarts a day, and hold it till six months gone.

Fourth order give six quarts a day, and hold it till five months gone.

Fifth order give five quarts a day, and hold it till four months gone.

Sixth order give four quarts a day, and hold it till three months gone.

Seventh order give three quarts a day, and only hold it till again in calf.

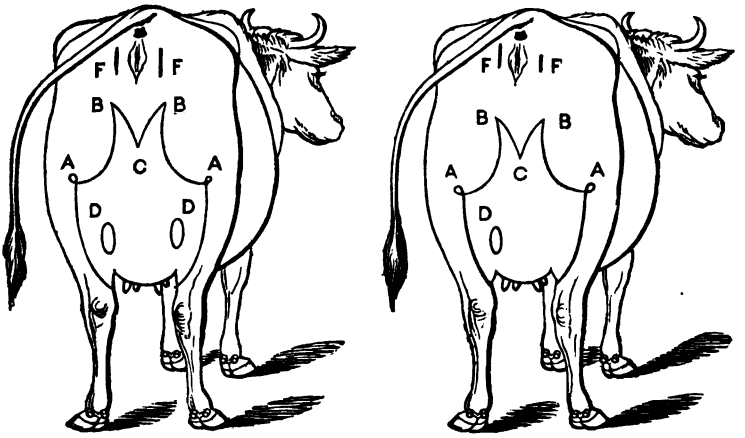
Eighth order give two quarts a day, and only hold it till again in calf.

The ecussons to the right and left of the bearing, marked F F, are very discernible in this class; but they should be of the same size as those above described, in the description of the particular marks belonging to this class. When they are less long or wide, it shows that they will only hold their milk till again in calf. When they are 4 to 4½ inches long, and from 1½ to 2 inches wide, they are generally pointed at the ends, and of a coarse hair; they then denote a bâtarde or mongrel cow, which will lose its milk as soon as again in calf, or a very short time after. It may be remarked, that by the ecusson of this sort, in this class, the largest denote the worst cow; the smallest denote, in general, a better beast.—See plate 9, No. 4.

FOURTH CLASS—BICORNES (DOUBLE HORNED OR FORKED).

I CALL the cows of my fourth class Bicornes, because they have, in their gravure or form of ecusson, two forks, which represent two forks, with two little ecussons, marked F, to the right and left of the bearing. The cows of this class are productive and abundant in milk.

LARGEST SIZE.



FIRST ORDER—NO. I. SECOND ORDER—NO. II.

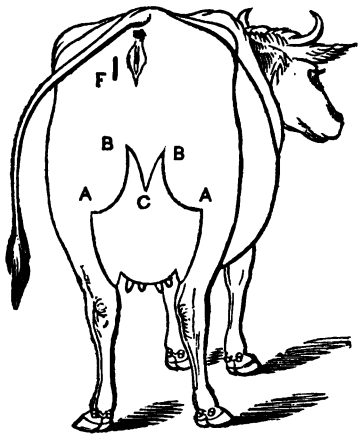
FIRST ORDER—NO. I.

These cows give seventeen quarts of milk daily, in full milk, and hold their milk till eight months gone in calf. The first order here has all the advantages of the first orders of the preceding classes. The udder is covered with a small down, and the bran or dust which comes off the skin, is of a reddish-yellowish colour in the gravure. This gravure has two horns, growing upwards, and the centre between the two horns falls down to the letter C. It springs from the centre of the four teats, within the two houghs, growing upwards in the whole extent of the mark, and flowing over on the thighs to the points A A; going from these points, it describes a crooked line

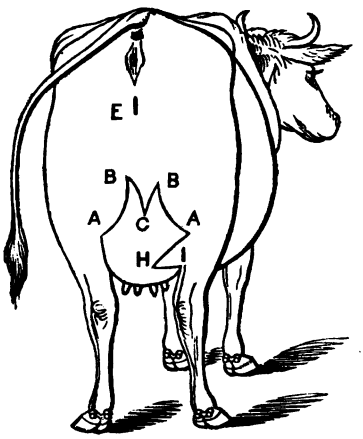
inside, to the points B B, which are about 4 inches distant from the bearing, whence, by nearly a right line, they are joined at C, about 7 inches below the bearing. To the right and left of the bearing there are two small ecussons of hair growing upwards, marked F F, about 2 inches long, and not quite half an inch wide. Above and opposite the teats behind, are two small ovals, marked D D.—See plate 4, order 1.

SECOND ORDER—NO. II.

These cows give fifteen quarts a day in full milk, and hold their milk till seven months gone in calf. The mark is the same as in the preceding order. The ecusson is a little lower, and more contracted; the colour of the skin is the same. There are two ecussons of hair growing upwards, to the right and left of the bearing; that on the left is about 2 inches long, that on the right, marked F, is only half the length. The peak on the right side, marked B, is lower down than that on the left, by 1¼ inches. There is only one oval on the left, above the teats behind, marked D.



THIRD ORDER—NO. III.



FOURTH ORDER—NO. IV.

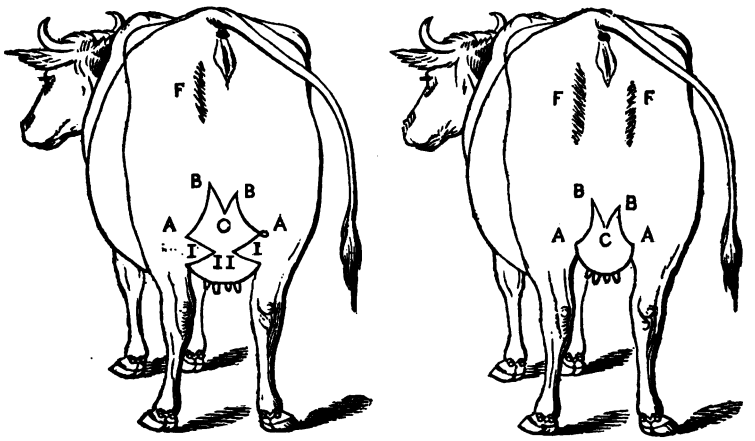
THIRD ORDER—NO. III.

These give thirteen quarts a day, and hold their milk till six months gone in calf. The mark is the same as above, but lower and more contracted between the thighs. There is only one ecusson

on the left, marked F. On the right, the point, marked B, is lower by 2 inches than that on the left side.

FOURTH ORDER—NO. IV.

These cows give eleven quarts a day, and hold their milk till five months gone in calf. The mark of this order resembles that of the preceding, but there is a line of hair growing upwards, below the bearing, marked E, about $2\frac{3}{4}$ inches long, by not quite half an inch wide. Below the points A A, the hair stops growing up, and is replaced by some hair growing down on the right, marked I, which sinks into the thigh at the point H. The hair growing down is whiter than that which grows up; its size or width, going from A A, is about 4 inches. It forms, in sinking, an acute angle, at the point I, about 6 or 7 inches long.



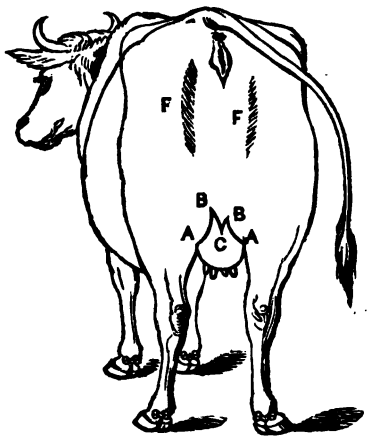
FIFTH ORDER—No. V. SIXTH ORDER—No. VI.

FIFTH ORDER—NO. V.

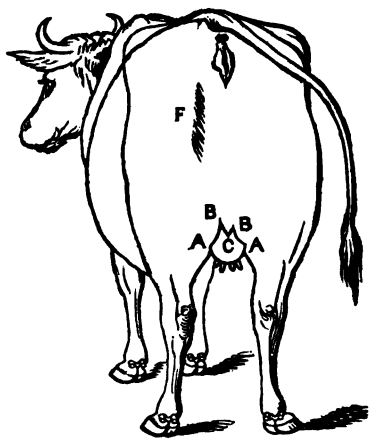
These cows give nine quarts per day, and hold their milk till four months gone in calf. They have the same form of mark as above. The gravure is more contracted in all parts. On the left, near the bearing, there is an ecusson of hair growing up and bristling, marked F, about 6 inches long and 2 inches wide. To the right and left of point A, are two barenesses (scarcities) of hair growing up, marked I, which sink into the thighs at the points I I.

SIXTH ORDER—NO. VI.

These cows give seven quarts of milk per day, and hold it till three months gone in calf. They have the same mark as above, but more contracted in all the parts of the ecussons, which sink into the thighs. Above the mark, on the right and left of the bearing, are two separate ecussons, marked F F, of hair growing up, bristling outwards, of the same length and breadth as in the fifth order.



SEVENTH ORDER—No. VII.



EIGHTH ORDER—No. VIII.

SEVENTH ORDER—NO. VII.

These cows give five quarts of milk a day, and hold it till two months gone in calf. Same mark as above, but still more contracted at the bottom of the thighs. The ecussons to the right and left of the bearing, formed by some hairs growing upwards and bristling, are longer and larger than in the preceding order; but that on the right is less long than the other.

EIGHTH ORDER—NO. VIII.

These cows give three and a half quarts a day, and only hold their milk till again in calf. They have the same form of mark, but much more contracted at the bottom of the thighs. If there be any hair growing up, marked F, it is bristling, and goes across.

MIDDLE SIZE.

FOURTH CLASS.

First order give fifteen quarts a day, and hold their milk till eight months gone in calf.

Second order give thirteen quarts a day, and hold it till seven months gone.

Third order give eleven quarts a day, and hold it till six months gone.

Fourth order give nine quarts a day, and hold it till five months gone.

Fifth order give seven quarts a day, and hold it till four months gone.

Sixth order give five quarts a day, and hold it till three months gone.

Seventh order give three quarts a day, and only hold it till again in calf.

Eighth order give still less, and only hold it till again in calf.

SMALLEST SIZE.

FOURTH CLASS.

First order give twelve quarts a day, and hold it till eight months gone.

Second order give ten quarts a day, and hold it till seven months gone.

Third order give eight quarts a day, and hold it till six months gone.

Fourth order give six quarts a day, and hold it till five months gone.

Fifth order give four and a half quarts a day, and hold it till four months gone.

Sixth order give three quarts a day, and hold it till two and a half months gone.

Seventh order give two quarts a day, and hold it only till again in calf.

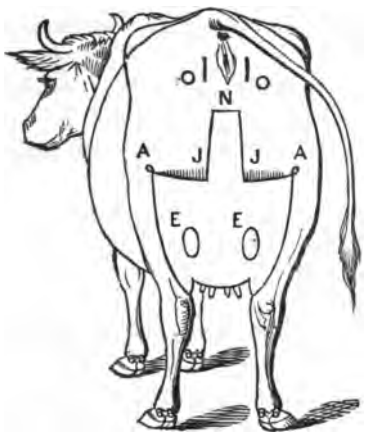
Eighth order.—These are still less abundant in milk, and lose it when again in calf.

The ecussons, marked F F, are of the same size, and have the same properties in the bâtardes of the fourth class, as those of the third class.—See plate 9, No. 5.

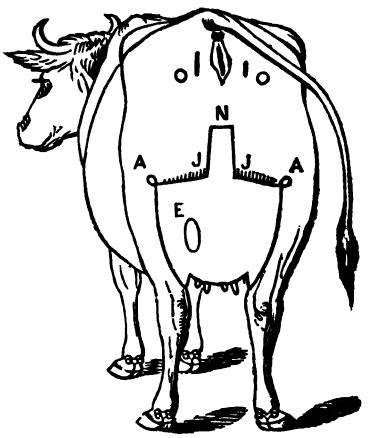
FIFTH CLASS—POITEVINES.

It is, doubtless, not a good name that I have given to these cows. It is not that I wished to describe them as the cows of Poiton particularly, but because the form of their gravure or ecusson represents a kind of vessel for holding wine—a dauce jeaune (darijohn); I, therefore, call these cows *Pot-de-vin*.

LARGEST SIZE.



First Order—No. I.



Second Order—No. II.

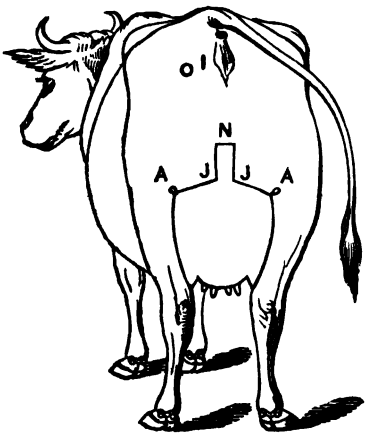
FIRST ORDER—NO. I.

The cows of this size and order give, in full milk, seventeen quarts a day, and hold their milk till eight months gone in calf. They have the skin on the gravure of the same colour as in the first orders of the preceding classes. The udder fine, covered with small down. This gravure springs from the four teats, within and above the houghs, and flows over towards the middle of the thighs, at the point A A, where it forms a right line coming to the points J J, which are about $4\frac{3}{4}$ to $5\frac{3}{4}$ inches one from the other. From the points J J a line of hair, growing up, extends itself and terminates square at the letter N. This square is from $2\frac{1}{4}$ to 3 inches wide, and stops at a distance of about 4 inches from the bearing. The cows which have the square most wide, and the letter N nearest to the bearing, are the

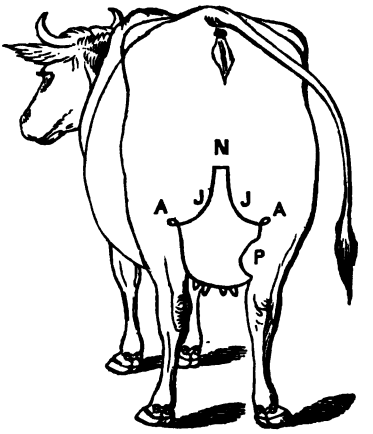
best milkers. Above the hind teats are two ovals, marked E E, formed by some hair growing down, about 4 inches long by $2\frac{3}{4}$ inches wide. To the right and left of the bearing are two smaller ecussons of hair, growing upwards, marked o o; they are about $2\frac{1}{4}$ inches long, and not quite half an inch wide. The hair of these ecussons is short, fine, and very distinct from the hair growing downwards.—See plate 5, order 1.

SECOND ORDER—NO. II.

These cows give fourteen and a half quarts of milk per day, and hold their milk till seven months gone in calf. The mark has the same form as order 1, but a little more contracted in the entire gravure, where the hair grows upward. Above the hind teats there is an oval on the right, formed by hair growing down, and marked E. The ecusson on the left of the bearing is about $2\frac{1}{4}$ inches long, and not quite half an inch wide; but that on the right is only half the length, and of the same width.



THIRD ORDER—NO. III.



FOURTH ORDER—NO. IV.

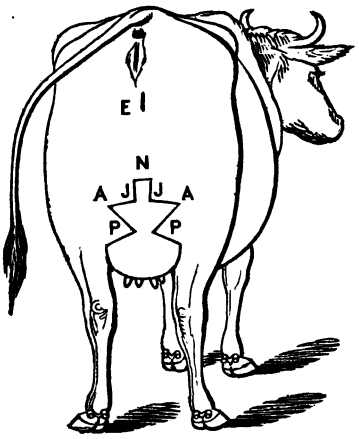
THIRD ORDER—NO. III.

These cows give twelve quarts per day, and hold their milk till six months gone in calf. The mark has the same form as in order 2, but more contracted. The points A A are more rounded, and do not flow over the thighs. The hair growing up, in parting from J J, is

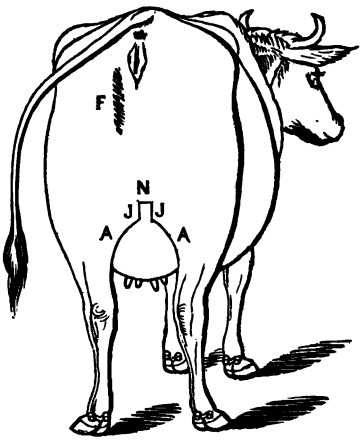
more contracted. The point N is lower below the bearing. There is only one ecusson on the left of the bearing, marked O, 1½ inch long, by not quite half an inch wide.

FOURTH ORDER—NO. IV.

These cows give ten quarts per day, and hold their milk till five months gone in calf. The mark is more contracted in all parts. The points A A are more sunk, and there is a curved line, which passes by J J. The line from J J to N is much shorter than in the third order. Below, from the point A, on the right side, is a scarcity or bareness of hair, growing up, marked P.



FIFTH ORDER—No. V.



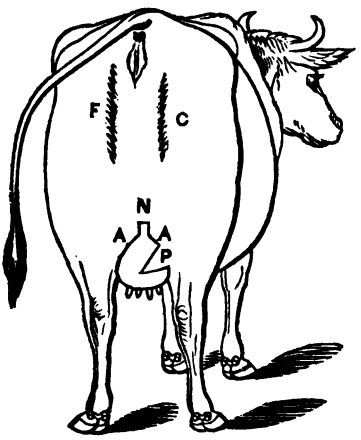
SIXTH ORDER—No. VI.

FIFTH ORDER—NO. V.

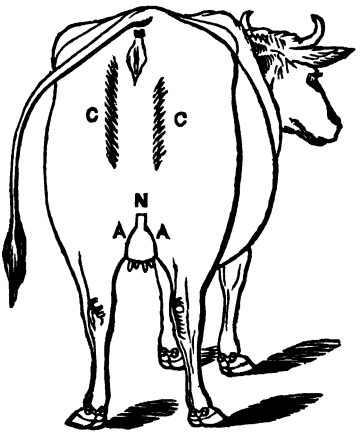
These cows give eight quarts per day, and hold their milk till four months gone in calf. The mark is more contracted. The points A A are more sunk in the bottom of the thighs, and are not so apparent as in order 4. Below the bearing there is a little hair, growing upwards, about 1¼ inch long, by not quite half an inch wide, marked E. The point N is much farther from the bearing than in the other orders. To the right and left of the points A A are two scarcities or barenesses of hair, growing upwards, which sink into or upon each thigh, marked P P, 4¾ inches wide by 4 inches long.

SIXTH ORDER—NO. VI.

These cows give six quarts per day, and hold their milk till three months gone in calf. The gravure is more contracted and lower than in the fifth order. To the left, near the bearing, is a bristling ecusson of hair, growing upwards, marked F, which is about 4¾ inches long by 1½ inch wide.



SEVENTH ORDER—No. VII.



EIGHTH ORDER—No. VIII.

SEVENTH ORDER—NO. VII.

These cows give four quarts per day, and hold their milk till two months gone in calf. The gravure is still more low and contracted. To the right and left of the bearing are two ecussons of hair, growing upwards and bristling: that on the left, F, is about 5 or 5½ inches long; that on the right, C, is 4 inches long by 1½ inch wide. On the right, and below the point A, is a scarcity or bareness of hair, growing up, marked P.

EIGHTH ORDER—NO. VIII.

These cows give two quarts per day, and only hold it till again in calf. There is hardly any mark, and the points A A are barely distinguishable. The bristling hair on the right and left of the bearing, marked C C, denotes degeneration, or bad qualities.

MIDDLE SIZE.

FIFTH CLASS.

First order give, in full milk, fourteen and a half quarts per day, and hold their milk till eight months gone.

Second order give twelve quarts per day, and hold milk till seven months gone.

Third order give ten quarts per day, and hold milk till six months gone.

Fourth order give eight quarts per day, and hold milk till five months gone.

Fifth order give six quarts per day, and hold milk till four months gone.

Sixth order give five quarts per day, and hold milk till three months gone.

Seventh order give three quarts per day, and hold milk till two months gone.

Eighth order still less abundant, and hold it till again in calf.

SMALLEST SIZE.

FIFTH CLASS.

First order give, in full milk, ten quarts per day, and hold their milk till eight months gone.

Second order give eight quarts per day, and hold milk till seven months gone.

Third order give six quarts per day, and hold milk till six months gone.

Fourth order give five quarts per day, and hold milk till five months gone.

Fifth order give four quarts per day, and hold milk till four months gone.

Sixth order give three quarts per day, and hold milk till three months gone.

Seventh order give two quarts per day, and hold milk till two months gone.

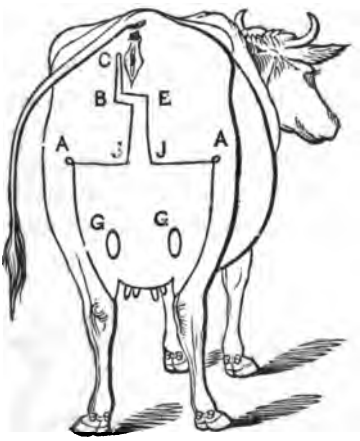
Eighth order give very little milk, and that only till again in calf.

When the ecussons, marked F F, are of the length and breadth specified in the designation of the third and fourth classes, they indicate cows bâtardes. Here, as before, the smaller ecussons indicate the best cows.—See plate 9, No. 6.

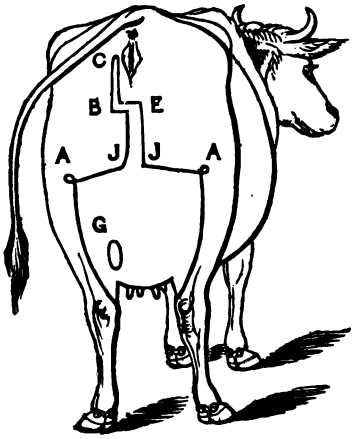
SIXTH CLASS—EQUERRINES.

THIS name expresses the form of gravure or ecusson, which indicates a square—above. The description that I am about to give, will better illustrate this figure.

LARGEST SIZE.



FIRST ORDER—NO. I.



SECOND ORDER—NO. II.

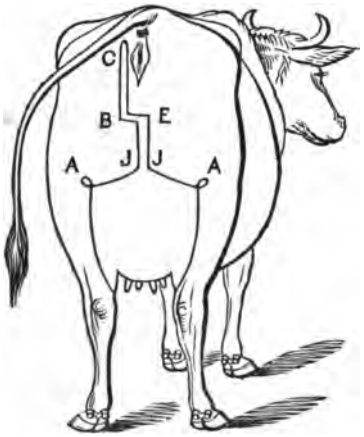
FIRST ORDER—NO. I.

The cows of this size, and of this order, give, in full milk, seventeen quarts daily, and hold their milk till eight months gone in calf. The scarf-skin on the gravure is the same as in the first orders of the preceding classes, the hair, of course, growing upwards on it. The udder is fine, covered with a short and fine hair. The gravure springs from the bottom of the thighs within, and a little way from the houghs, rising upon the thighs, and flowing over towards the points A A; from that it forms a square, by a right line, which sinks into the thighs at the points J J, which are distant from one another about $4\frac{3}{4}$ to $5\frac{3}{4}$ inches. From the points J J two right lines in rising join, forming an acute angle at the letter E, which is distant from the bearing about 2 inches. From thence goes a line, forming a square, to the left, marked B, in rising at the same side to C, which is close to the opening of the bearing. The distances from E B and B C are nearly equal—viz., E B 4 inches long, and about one inch wide;

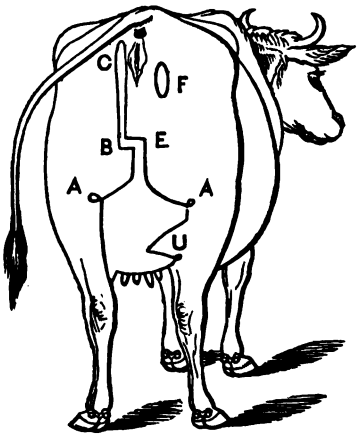
and B C $4\frac{3}{4}$ to $5\frac{3}{4}$ inches long, and about one wide. Above and opposite the hinder teats, to the right and left, on the udder, are two small ovals, formed by some hair, growing downwards, in the middle of the hair which grows up, and marked G G, about 4 inches long, and $2\frac{1}{2}$ inches wide. These ovals of hair, growing down, are distinguished by their white colour. The squares which approach nearest to the bearing denote the best milkers.—See plate 6, order 1.

SECOND ORDER—NO. II.

These cows give fourteen and a half quarts of milk per day, and hold their milk till seven months gone in calf. The mark is the same as in the preceding order, but more contracted throughout the ecusson or gravure. The square on the left of the bearing is a little lower and longer than in the first order. There is only one oval, on the left, above the hinder teats. The oval is the same size as above, marked G.



THIRD ORDER—NO. III.



FOURTH ORDER—NO. IV.

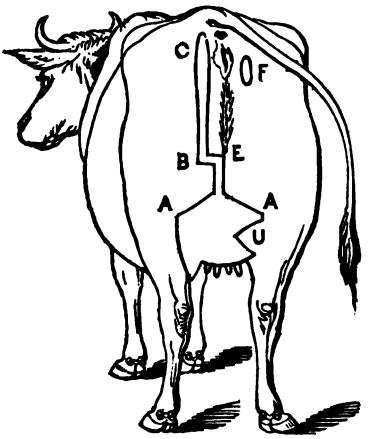
THIRD ORDER—NO. III.

These cows give twelve quarts of milk daily, and hold it till six months gone in calf. The gravure has always the same form, but lower and more contracted in all its parts. The points A A do not flow over so much upon the thighs as in the second order, and the gravure brings itself into a narrower compass, by a curved line upon the points J J. The angle formed by J J joining the letter E, is more

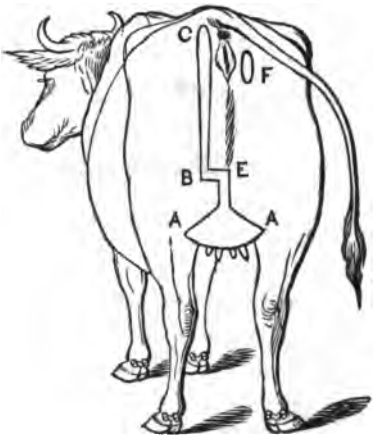
narrow than E B, and shorter than B C. This line is wider and longer than in the preceding order.

FOURTH ORDER—NO. IV.

These cows give ten quarts per day, and hold their milk till five months gone in calf. The mark is proportionably narrower and lower. To the right of the bearing is an ecusson of hair, bristling and growing upwards, marked F, which is about 4 inches long and 1½ inch wide. At the point A, on the right, is a scarcity or bareness of hair, which sinks itself into the thighs, marked U.



FIFTH ORDER—NO. V.



SIXTH ORDER—NO. VI.

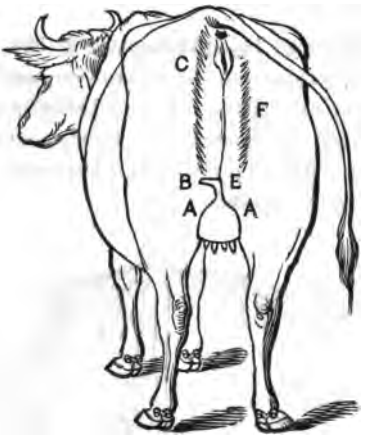
FIFTH ORDER—NO. V.

These cows give eight quarts per day, and hold their milk till four months gone in calf. Same marks, but always more contracted in all the extent of the gravure. The lines of hair growing up, to the right and left of the bearing, are bristled. At the point A, on the right, is a scarcity or bareness of hair, which sinks itself into the thighs, U.

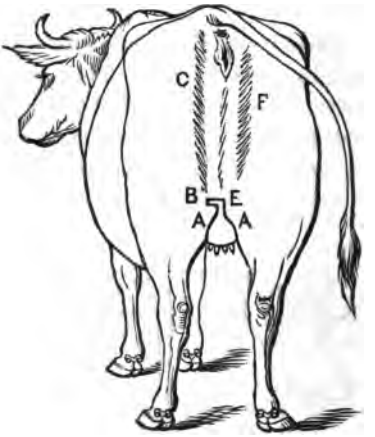
SIXTH ORDER—NO. VI.

These cows give six quarts of milk per day, and hold their milk till three months gone in calf. The gravure is still more contracted at the bottom of the thighs. The square is still further down from

the bearing. The lines of hair growing upwards, to the right and left of the bearing, are coarse and bristling.



SEVENTH ORDER—NO. VII.



EIGHTH ORDER—NO. VIII.

SEVENTH ORDER—NO. VII.

These cows give four quarts of milk per day, and hold their milk till two months gone in calf. The ecusson is still lower than in the sixth order. The line of hair growing up, on the right, marked F, is also more bristling and wider.

EIGHTH ORDER—NO. VIII.

These cows give two quarts of milk per day, and only hold their milk till again in calf. The form of the ecusson is the same, but very narrow, and sunk into the thighs.

MIDDLE SIZE.

SIXTH CLASS.

First order give, in full milk, thirteen quarts per day, and hold milk till eight months in calf.

Second order give ten quarts per day, and hold milk till seven months in calf.

Third order give eight quarts per day, and hold milk till six months in calf.

Fourth order give six quarts per day, and hold milk till five months in calf.

Fifth order give four quarts per day, and hold milk till four months in calf.

Sixth order give three and a half quarts per day, and hold milk till three months in calf.

Seventh order give two quarts per day, and hold milk till six weeks in calf.

Eighth order still less abundant, and only till again in calf.

SMALLEST SIZE.

SIXTH CLASS.

First order give, in full milk, nine quarts per day, and hold it till eight months gone.

Second order give eight quarts per day, and hold it till seven months gone.

Third order give six quarts per day, and hold it till six months gone.

Fourth order give four quarts per day, and hold it till five months gone.

Fifth order give three and a half quarts per day, and hold it till four months gone.

Sixth order give two and a half quarts per day, and hold it till three months gone.

Seventh order give one quart per day, and hold it till six weeks gone.

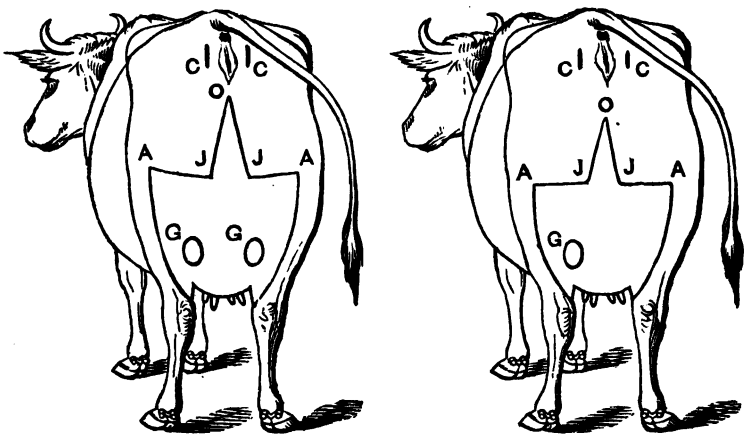
Eighth order still less, and only hold it till again in calf.

When the cows of this class have the ecusson on the right of the bearing, marked o, of a bristling hair, it denotes a bâtarde. This is the only sign which denotes degeneration in this class, and in each of its orders, besides the length and width of the ecusson, and, above all, if the rising of the square on the left of the cow has an equally bristling hair as the ecusson on the right. These ecussons, formed by the hair growing upwards, which goes across, are generally of a coarse hair, and from $4\frac{3}{4}$ to $5\frac{3}{4}$ inches long, and 2 inches wide. When they are small, the loss of milk is not so sensible nor quick; but the cows will not lose it less by a gradual diminution of the produce some time after they become in calf.—See plate 9, No. 6.

SEVENTH CLASS—LIMOUSINES.

THE first cow of this class which I examined was limousine (rough wall). But it must not be considered that there are none other than limousine cows belonging to this class. You find these cows in all the families, with their orders and their differential marks.

LARGEST SIZE.



FIRST ORDER—No. I. SECOND ORDER—No. II.

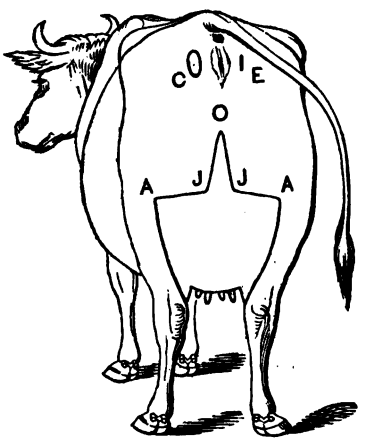
FIRST ORDER—NO. I.

The cows of this size, and of this order, give, in full milk, fourteen quarts a day, and hold their milk until eight months gone in calf. The first order of this class has the scarf-skin of the same colour as that of the first order of the preceding classes, in the gravure or ecusson formed by the hair, growing the wrong way, rising. The udder is fine, and covered with a short hair, fine and silky. The gravure springs, as in the foregoing classes, from the bottom of the thighs, departing from the middle of the four teats, extending itself within and above the houghs, in rising and flowing over the thighs, to the letters A A. From this point it forms a square, by a right line, that sinks itself in lowering towards the inside, to the points J J, which are distant from each other about 4 inches. From these points, J J, two right lines grasp and join, near the bearing, at O,

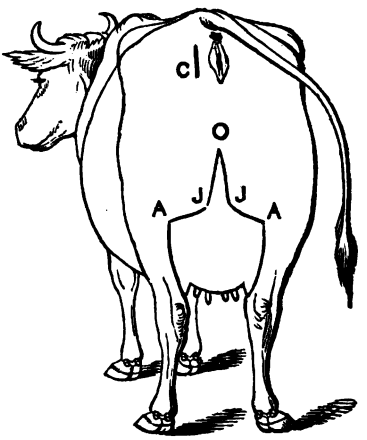
which is $2\frac{3}{4}$ inches distant from it, forming an acute angle above, and obtuse below, and round outwards. To the right and left of the bearing are two ecussons, marked c c, $2\frac{3}{4}$ inches long, and $1\frac{1}{2}$ wide each. Above the hinder teats are two ovals of hair, growing down, in the hair which is growing up, marked G G; they are about 4 inches long, and nearly 4 wide; the hair forming them is very apparent, from its whitish colour. The cows that are not well characterized or marked, and which have not the ecusson of hair, rising on the right and left of the bearing, will be, nevertheless, equally good.—See plate 7, order 1.

SECOND ORDER—NO. II.

These cows give twelve quarts a day, and hold it till seven months gone in calf. The characteristic signs are the same as in the first order, except that the ecusson is more contracted in all parts; the ecussons on the right and left of the bearing are shorter and wider than those which, in the preceding order, are marked c c.



THIRD ORDER—NO. III.



FOURTH ORDER—NO. IV.

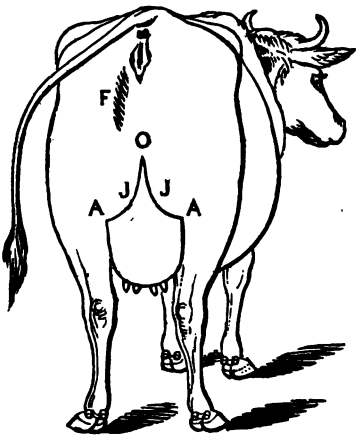
THIRD ORDER—NO. III.

These cows give ten quarts a day, and hold their milk till six months gone in calf. The gravure is the same, but more contracted; the ecusson on the left, near the bearing, marked c, is $4\frac{3}{4}$ inches long, and $2\frac{3}{4}$ inches wide. On the right of the bearing is a small ecusson,

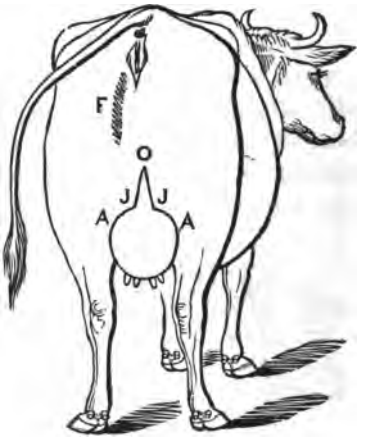
marked E; also, of hair growing upwards, which is $2\frac{3}{4}$ inches long, and one inch wide. From the point o to the bearing is a distance of $5\frac{1}{4}$ inches.

FOURTH ORDER—NO. IV.

These give eight quarts per day, and hold it till five months gone in calf. The gravure is always the same, but more contracted; this order has only one ecusson of hair, growing upwards, upon the left, near the bearing, marked c, 7 inches long and one inch wide.



FIFTH ORDER—NO. V.



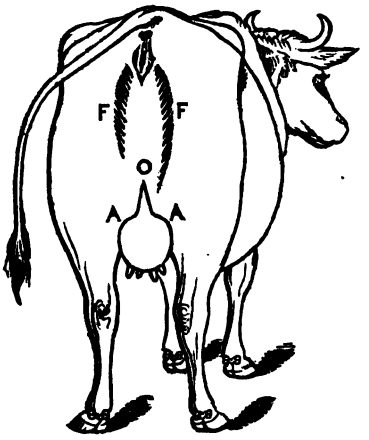
SIXTH ORDER—NO. VI.

FIFTH ORDER—NO. V.

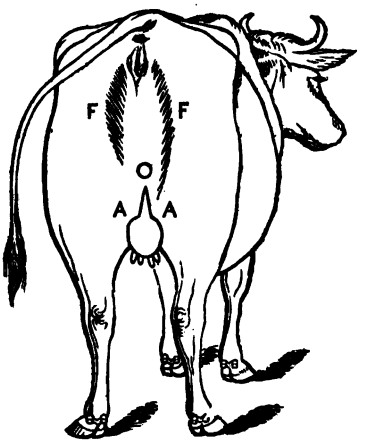
These give six and a half quarts a day, and hold it till four months gone in calf. Same form of gravure, but more and more low and contracted, in the bottom of the thighs. If there should be any ecussons of hair, bristled, on the right and left of the bearing, they will be longer and wider than in the preceding order.

SIXTH ORDER—NO. VI.

These give five quarts a day, and hold it till three months gone. Gravure the same, but always more contracted at the bottom of the thighs; and the point o is farther from the bearing than in the preceding order. To the left of the bearing is an ecusson of hair, growing up, marked F.



SEVENTH ORDER—No. VII.



EIGHTH ORDER—No. VIII.

SEVENTH ORDER—NO. VII.

These give four quarts a day, and hold it till one month gone. The gravure still lower and more contracted at the bottom of the thighs. The ecussons on right and left of the bearing, marked F F, are of a coarse hair, which bristles in growing upwards, and is a little wider than in the above orders.

EIGHTH ORDER—NO. VIII.

These give two quarts a day, and only hold it till again in calf. Same gravure, but so contracted and sunk into the thighs that one can hardly perceive it. The beards of hair growing up, and still longer and wider than in the seventh order.

MIDDLE SIZE.

SEVENTH CLASS.

First order give, in full milk, eleven quarts a day, and hold it till eight months gone.

Second order give nine quarts a day, and hold it till seven months gone.

Third order give seven quarts a day, and hold it till six months gone.

Fourth order give five and a half quarts a day, and hold it till five months gone.

Fifth order give four quarts a day, and hold it till four months gone.

Sixth order give three quarts a day, and hold it till three months gone.

Seventh order give two quarts a day, and hold it till two months gone.

Eighth order give two quarts a day, and hold it until again in calf.

SMALLEST SIZE.

SEVENTH CLASS.

First order give, in full milk, eight quarts a day, and hold it till eight months gone.

Second order give seven quarts a day, and hold it till seven months gone.

Third order give six quarts a day, and hold it till six months gone.

Fourth order give five quarts a day, and hold it till five months gone.

Fifth order give four quarts a day, and hold it till four months gone.

Sixth order give three quarts a day, and hold it till three months gone.

Seventh order give two quarts a day, and hold it till one month gone.

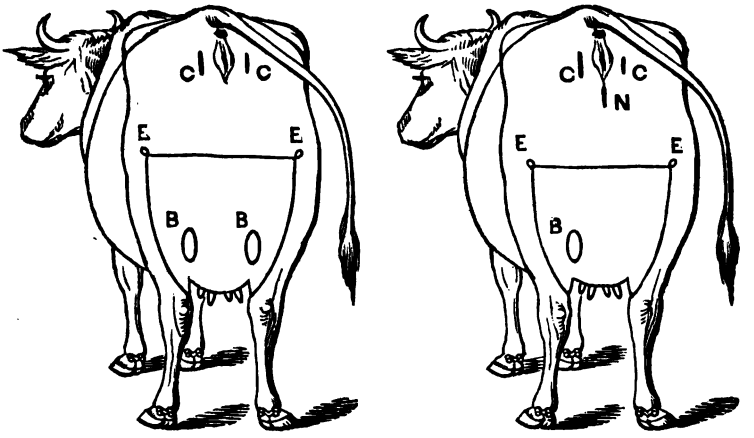
Eighth order give one quart a day, and hold it until again in calf.

The ecusson of hair, growing up on the right and left of the bearing, marked F F, is of the same length and breadth as those of the bâtardes cows. It equally indicates the degenerated cows and bâtardes of the seventh class.—See plate 9, No. 8.

EIGHTH CLASS—CARRESINES.

According to my system of nomenclature, I call those cows Carresines whose gravure forms very nearly a square at the top.

LARGEST SIZE.



First Order—No. I. Second Order—No. II.

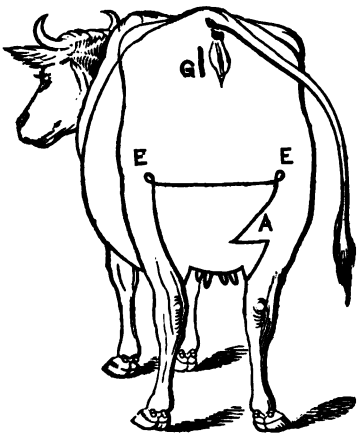
FIRST ORDER—No. I.

The cows of this size and order give, in their full milk, twelve quarts a day, and hold it till near eight months gone in calf. This order and this class have a gravure that differs from all the other classes; the bran or dust which comes off the ecusson, is of a reddish and yellowish colour, and comes off the skin like a powder; the hair of the ecusson is short and fine; the skin like satin; the four teats are well separated. This ecusson, as in all other classes, springs from the middle of the four teats, within and a little above the houghs, in growing upwards, and flowing over on the thighs at the points E E, forming at these points a transversal line from the middle of one thigh to another; the figure of the ecusson stops at the bottom of the thighs, towards the middle of the udder. Although the ecusson or characteristic gravure does not rise as high as in the preceding classes, the two little ecussons on the right and left of the bearing will be remarkable, which indicate the maintenance of milk during the new gestation, or being again in calf. When they are not

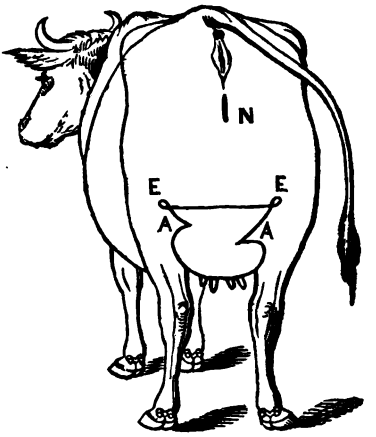
larger than belongs to the class and the order, the ecussons, marked c c, of a little hair growing upwards, 3 to 4 inches long, by not quite half an inch wide. Above and opposite the hinder teats are two ovals of hair, growing down, in the midst of the hair growing upwards, marked B B; the colour of the hair on these ovals is whitish.—See plate 8, order 1.

SECOND ORDER—NO. II.

These give ten quarts a day, and hold it till seven months gone. The mark is the same, but more contracted in the lower part of the ecusson. The ecussons on the right and left of the bearing are unequal, the right being shorter by an inch or inch and a half than that on the left, which is the same length as that of the first order; they are marked c c. Many orders have a little ecusson below and opposite the bearing, marked N, the upper part of which touches the bearing. It is about 2 inches long, and not quite half an inch wide; it is of a fine hair, growing up.



THIRD ORDER—NO. III.



FOURTH ORDER—NO. IV.

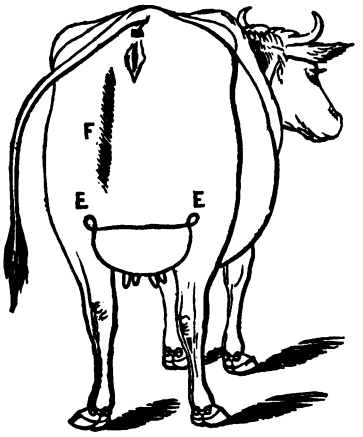
THIRD ORDER—NO. III.

These give eight quarts a day, and hold it till six months gone in calf. The mark is the same, but more contracted than in order 2; the points E E are also lower and more contracted. There is only one ecusson of hair growing upwards, on the left side, marked G,

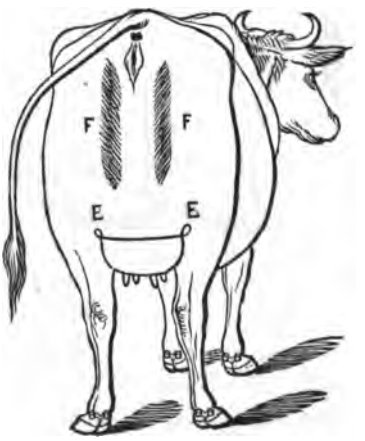
which bristles, always turning outwards, 4¾ to 5¾ inches long and one inch broad. At the bottom of the thighs, on the right side, in going from point A, there is a scarcity of hair growing upwards, which is replaced by some hair growing downwards, that sinks in a point towards the teats, 7 inches long by 4 inches wide. Whenever these marks exist, in whatever class or whatever order they may be, they indicate a diminution of nearly a third of the produce attributed to each other. The hair growing downwards is remarkable for its whitish colour.

FOURTH ORDER—NO. IV.

These cows give six quarts a day, and hold it four and a half months after being again in calf. The gravure is lower and more contracted than in the third order. There is merely a line of hair growing up between the thighs, opposite the bearing, marked N, about 4 inches long and three-fourths of an inch wide, which stops at about 2 inches from the bearing. There is in the ecusson two marks of a want or scarcity of hair growing upwards, on the right and left, marked A A; that on the right is longer than that on the left.



FIFTH ORDER—No. V.



SIXTH ORDER—No. VI.

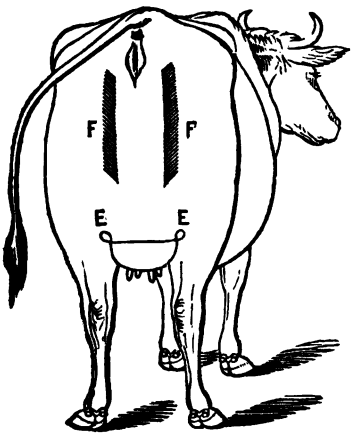
FIFTH ORDER—NO. V.

These cows give five quarts a day, and hold it till three and a half months gone. The mark is always low and contracted. On the

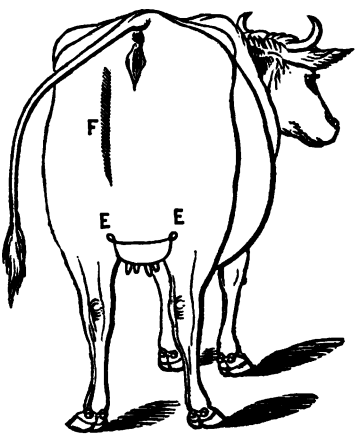
left of the bearing only, are some coarse hairs, F, which bristle in growing upwards, $5\frac{3}{4}$ inches long and $1\frac{1}{2}$ inch wide. When the ecussons are of the same size as those of the first order, the cows will maintain their milk as those of that order.

SIXTH ORDER—NO. VI.

These give four quarts a day, and hold it till two months gone. The ecusson is lower and more contracted at the bottom of the thighs The points E E do not flow over on the thighs, and are plunged deeper towards the middle within each thigh. The lines of hair growing upwards to the right and left of the bearing, F F, the longer and wider of bristled hair, although unequal, are always a bad mark of the keeping of the milk when again in calf.



SEVENTH ORDER—NO. VII.



EIGHTH ORDER—NO. VIII.

SEVENTH ORDER—NO. VII.

These give three quarts a day, and hold it till one month gone in calf. The ecusson is lower and more contracted than the foregoing The signs of degeneration are the same, and marked F.

EIGHTH ORDER—NO. VIII.

These give two quarts a day, and hold it till again in calf. The ecusson is still lower, and more contracted at the bottom of the thighs. You can hardly see the gravure formed by the hair growing

against the grain to this depth, with some coarse hairs which come across in the left part, on rising towards the bearing, marked F.

MIDDLE SIZE.

EIGHTH CLASS.

First order give, in full milk, nine quarts per day, and hold it till eight months gone.

Second order give eight quarts a day, and hold it till seven months gone.

Third order give seven quarts a day, and hold it till five and a half months gone.

Fourth order give six quarts a day, and hold it till four months gone.

Fifth order give five quarts a day, and hold it till three months gone.

Sixth order give four quarts a day, and hold it till two months gone.

Seventh order give three quarts a day, and hold it till one month gone.

Eighth order give two quarts a day, and hold it till again in calf.

SMALLEST SIZE.

EIGHTH CLASS.

First order give six quarts a day, and hold it till eight months gone.

Second order give five quarts a day, and hold it till seven months gone.

Third order give four quarts a day, and hold it till five months gone.

Fourth order give three quarts a day, and hold it till four months gone.

Fifth order give two quarts a day, and hold it till three months gone.

Sixth order give one quart a day, and hold it till two months gone.

Seventh and eighth still less abundant, and hold it only till again in calf.

The bâtardes cows of this class have no particular mark or ecusson;

the hair is growing downwards from the bottom of the bearing to the bottom of the thighs, and below the teats, without any hair growing upwards. Not having any distinctive mark, they will not be shown on the ninth plate. Some of these cows offer great advantages for the produce, but they do not hold their milk long after being again in calf. Those which have the hair very fine at the bottom of the thighs, will give good milk; those, on the contrary, whose hair on that part is coarse and thin, will give a watery milk.

BULLS.

After having applied to each class of cows the designation of bâtardes which belong to them, it is right also to point out what are the signs which characterize the bulls bâtards. In each class to which the bulls belong, the form of the mark is very nearly the same as that of the cows of that class, but the ecusson is a little more contracted in all parts. But, when there is in this ecusson or gravure, which springs from the outside of the thighs to the testicles, some interstices of hair growing upwards, filled up by more hair growing downwards, the contrary way from that which grows up, these lines of hair downwards indicate a bull bâtard; the larger those lines of hair are, the more they indicate the degeneration or bastardizing. The bulls which have the form of the ecusson very high and well characterized, are not bâtards.

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DISTEMPER IN CATTLE.

ARSENIC CURE.

(*Extracted from the* IRISH FARMERS' GAZETTE.)

WHEN the distemper makes its appearance, which is easily perceived in dairy cows, by loss of milk and appetite, and a heavy breathing on the least exertion, and in dry stock by loss of appetite, heavy breathing, eyes dull and glazed; when affected, they will be always found by themselves in the field, away from the rest of the stock. When these symptoms are observed, no time must be lost in putting them under the course. The first thing is to have them put into a well-ventilated house, and to keep them fasting for thirty-six or forty hours, and then to commence by giving the first dose of arsenic—six grains, suppose—at six o'clock in the morning; the next dose, of six grains, is to be given at six o'clock in the evening; they are then to remain until six o'clock next morning with nothing but water, which must be always kept before them. They are then to get another dose of three grains, and at 12 o'clock a bottle of linseed-oil, and at six o'clock in the evening another dose of three grains. This day's proceedings are to be repeated three successive days, after which they are to get an occasional pint of linseed-oil and two bottles of oatmeal gruel daily, until they begin to eat freely: they are then to be let out into a plantation or other cool place, until they get strong enough to go out to their regular pasture.

IN CASE OF PREVENTION.

In cases of prevention, the course is simple, which is as follows:—When the catttle are to be put under the preventive course, the first thing is to have them put into an open house, and to keep them fasting for twenty-four or thirty-six hours. They are then to be bled, taking from each three or four quarts; immediately after, they are to get the first dose of arsenic, and in twelve hours afterwards, the second. The arsenic is to be mixed in a bottle of oatmeal gruel (warm), and given to the animal. It is necessary to rinse the bottle, by secondly filling it with thin gruel, as without that there would be a likelihood of some of the arsenic remaining in the bottle. After this they are to remain fasting for twenty-four hours, and then let out to grass as usual.

The quantities of arsenic to be used for cattle suffering from the distemper, are as follow:—

For cows, 2 doses of 6 grains, and 6 doses of 3 grains each.
For three and four year olds, the same.
For two-year-olds, 2 doses of 4 grains, and 6 doses of 2 grains each.
For one-year-olds, 2 doses of 2 grains, and 6 doses of one grain each.
In cases of prevention, the quantities are—
For full-grown cattle, 2 doses of 8 grains each.
For two-year-olds, 2 doses of 6 grains each; and
For one-year-olds, 2 doses of 3 grains each.

If the above directions are not carefully and strictly carried out, a cure need not be expected; and, above all, be *particular* to get the arsenic *genuine*, as we have known instances where cows were lost, by the apothecary substituting some other white powder, not wishing to give arsenic to strangers.